

CONSUMERS UNION *reports-*

JULY 1937

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**MINIATURE
CAMERAS**

Leica, Contax, Rolleiflex,
Argus?—A Survey of the
Field

**MECHANICAL
REFRIGERATORS**

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Changed Models

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Ratings of 67 Gasoline
Samples and 51 Oils

BATHING SUITS

SUNBURN

PREVENTIVES

ELECTRIC FANS

ICE BOXES

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**Labor Notes, News
and Other Features**

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**CONSUMERS UNION
OF UNITED STATES**



CONSUMERS UNION

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CU's ratings of products are based on both quality and price. A product rated "Also Acceptable" may be of higher quality than one rated "Best Buy," but the "Best Buy" will normally give greater return per dollar. In most cases a product rated "Not Acceptable" is judged not worth buying at any price, because of inferior quality or because it is potentially harmful. Products rated "Not Acceptable" for more specific reasons are so noted.

A Warning to Consumers

WHAT should be the function of an organization representing consumers? Well, let's ask Mr. William Trufant Foster, Director of the Pollak Foundation for Economic Research. Mr. Foster gives his opinion thus, in a recent issue of a publication called *National Consumer News*:

A statesman-like representative of capital or labor or consumers will not make fighting his primary purpose; he will not give exclusive attention to "protection" of his group; he will seek above all else to find those areas of common interest in which the three groups, working together for the public interest, promote what turns out to be, in the long run, beneficial to the producer, the laborer and the consumer.

Maybe Mr. Foster means to talk sense, even though he falls into the old confusion of treating consumers and workers as separate beings. But these pleas for the co-operating spirit are guilty until proven innocent; they have been mouthed too often in the furtherance of exploitation. Who is Mr. Foster?

Mr. Foster is the head man, or at least the front man, of a proposed Consumers Foundation, organization of which has been getting under way for a couple of months now. Public statements of the Foundation's intentions have been scarce. But from one or two sources it has emerged that plans call for a sort of research group, a clearing house for data affecting consumer interests—on the basis of which the Foundation would advise and direct action toward the realization of consumer aims.

The picture is impressive enough. Such an organization could be highly useful to consumers. It is regrettable,

therefore, that the picture turns out to have all the earmarks of a phony.

A thing is phony if it represents itself as one thing and is in fact another. The projected Consumers Foundation represents itself as a consumer agency and is in effect an agency of business interests—more specifically, a creation of the Institute of Distribution, which is a trade association made up of drug, food, and variety chains (among them Sears Roebuck, Walgreen, Liggett, Woolworth). From the Institute of Distribution, it appears, come the plans on which the Foundation will operate; from the Institute's members, it appears, will come much of the support behind the Foundation.

We do not think that this analysis of the Foundation's set-up will meet with the approval of the Institute of Distribution, which probably does not wish to bore the consumer with such technical matters. But we find the idea of the Foundation ingenious enough to warrant a full description. Ingenious? Yes; but any worker who has ever seen an employer trying to put together a company union will see a strong similarity here. Significantly, in this connection, the Foundation's plans as understood in the trade stipulate that no work shall be done with any of the existing consumer groups (such as the Consumers National Federation—see the *April Reports*). The Foundation is supposed to have its eye on housewives uneducated in consumer organization.

Now why do you suppose the chains are going to all this trouble? We know of no clearer statement of the reasons than was given in a recent issue of *Tide*, an advertising trade journal. *Tide's* writer reviews the legis-

(Continued on page 31)

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CU's Tests of Medium- and Small-Size

ELECTRIC FANS

Point Up the Relative Inefficiency of the
Latter. Twenty-two Models Are Rated.

TESTS of 22 medium- and small-size electric fans show that a low-priced small fan may be much less economical and less satisfactory than a more expensive medium-size one. Even the least efficient 10-inch fan tested gave considerably more breeze and was much more efficient in its use of current than the best of the 8-inch variety.

The determination of "Best Buys" among fans rests on more points than these, however. Does the guard really protect the user from contact with the revolving blades? Does the fan offer risk of electric shock from contact with the metal frame? Does the fan motor have adequate bearings and proper provision for their lubrication? Is there any annoying hum or rattle? Does the fan vibrate unduly when in operation? The most efficient and economical fan must be further judged in terms of answers to such questions.

Many fans are fairly satisfactory on most of these counts, but tests of the current models show that there are few that are satisfactory on all. The difference between two apparently quite similar fans, especially in the lower price ranges, is often great.

SAFE operation could easily be assured with but slight added expense, if any, on the part of any manufacturer. The wire guard should, of course, be rigid and strong enough to withstand handling without bending. More important, however (and frequently neglected), the guard should give especially good protection from the back of the blades. Contact with the front of the blades usually means nothing worse than a rap on the fingers; contact with the back may mean a severe cut from the blade edges.

Several fans are now offered with so-called safety blades requiring no guard. Of the three fans of this type included in CU's test one, the *Diehl*

Ribbonaire, had loops of ribbon instead of blades; another, the *Samson Safe-flex*, had soft rubber blades; and the third, the *Master*, had rubber blades molded over a light metal core. The *Master* fan was inferior in most respects to other fans near the same price (\$2.77). Even the rubber blades—its special safety feature—were so poorly made that the metal core broke through the rubber in two places.

Fans with safety blades are of only average efficiency in their use of electricity when compared with those with the usual type of blades. But they are less dangerous and the good ones may be preferable where there are small children in the family.

SEVERE tests of electric insulation indicate that adequate protection against electric shock can easily be built into the ordinary type of a-c fans, even in the lowest price ranges. Tests made of the fans listed included measurements of leakage current to the metal frame of the fan under both normal operating conditions and conditions of high humidity, and tests for breakdown of the electric insulation at 1,000 volts.

All the fans listed have some provision for feeding oil or grease continuously to the bearings, usually by means of a felt wick in contact with the shaft. In several cases the feed was so designed that oil leaked from the bearings during operation. Bearings themselves were badly skimped on the lowest-priced models—often so much that even if well lubricated the fan could run only a few weeks or months at best before becoming unduly noisy.

Noise in an electric fan may come either from the blades themselves as they cut the air or from the motor. Several of the fans tested made use of wide overlapping blades of the so-



called "quiet" type. These fans do not have the distinct hum of fans with the conventional narrow blades; rather, they give a continuous rush of air. For this reason and because they are not as noisy as fans of equal capacity with conventional blades, they may be less annoying.

Motor noise may be caused by loose bearings or poor lubrication, or by an unbalanced mechanism which causes mechanical vibration and consequent bearing wear. Fans for use on direct current and universal-type fans (for either a-c or d-c) have in addition a characteristic motor noise made by the stationary brushes rubbing on the revolving commutator.

THE most important characteristic of an electric fan is, of course, its ability to produce a current of air. This ability was measured by a method developed by the United States Bureau of Standards for testing fans for government purchase (the method is outlined in Federal Specification No. W-F-101, available from the Superintendent of Documents, Washington, D. C., for 5c). The specification states: "The useful output of the fan shall be taken equal to the momentum imparted to the air. The momentum shall be measured by measuring the thrust reaction [force in pounds exerted by the fan on the air] of the fan." No requirement is given in the specification for the performance of fans smaller than 9 inches. Deviations of 8-inch models from the average performance of such fans are therefore given in the listings rather than a statement of compliance with a specified standard.

The efficiency of a fan in producing a breeze is measured in watts (rate of current consumption) per pound of thrust, the government requiring that 9- and 10-inch fans shall not exceed 170 watts per pound of thrust. The fans listed varied from 151 watts per pound for the best 10-inch model to 565 watts per pound for the least efficient 8-inch fan. The comparison is not entirely fair, as efficiency falls off rapidly as the diameter of the blades is decreased.

It is interesting to note here that an old second-hand direct-current fan with 16-inch diameter blades, included in this test only for comparison, gave over twice the breeze of any other

fan tested, and required only 63 watts per pound of thrust. Such performance emphasizes vividly both the ineffectiveness and the inefficiency of the small-size fans sold for household use.

Thrust (air-moving capacity) and efficiency were given the greatest weight in determining the relative quality scores of those fans that met minimum requirements for safety and durability.

All fans tested except one are designed for operation on 110 to 120 volt, 60 cycle alternating current. Such fans produce no radio interference. The *Signal Model 450A* fan which may be used on either a-c or d-c produced slight interference, as it does not have a built-in interference filter.

Small Fans

RATINGS of 8-inch diameter non-oscillating fans, and fans with non-rigid blades.

In order of quality without respect to price, the fans in this group (excluding the "Not Acceptable" fans) rate as follows:

Robbins and Myers, General Electric, Diehl Ribbonaire, Westinghouse, Samson Safe-flex, Coolspot, Emerson.

The ratings below are based on both quality and price.

Best Buy

Robbins and Myers List No. 914 (Robbins and Myers, Inc., Springfield, Ohio). \$3.45. Highest output (breeze production) for fans of this

ELECTRIC FANS: A Comparison of Efficiencies (Listings are in order of price)

MAKE & MODEL	PRICE \$	THRUST (IN LB.)	POWER CONSUMPTION (IN WATTS)		EFFICIENCY* (WATTS PER LB. OF THRUST)
			40 maximum	170 maximum	
Federal Specification for 9" or 10" size.....	—	.20 minimum			
Westinghouse Poweraire 10" Quiet.....	16.95	.34	61		180
General Electric 10" Quiet	16.50	.32	48		150
Robbins & Myers 10" Quiet	14.45	.21	41		190
Emerson 10" Standard.	12.95	.25	43		170
General Electric 10" Standard	12.95	.24	37.5		155
Westinghouse 10" Stand- ard	12.95	.25	40		160
Signal 10" Quiet (on d-c)	12.75	.41	60		145
Signal 10" Quiet (on a-c)	12.75	.27	46		170
Sears' Airflow 10" Pedes- tal	9.95**	.16	34		220
Diehl Ribbonaire	9.95	.13	44.5		340
Ward's 10" Quiet.....	6.95**	.18	38.5		220
General Electric 8"....	4.60	.11	32		290
Samson Safe-flex 6"....	3.95	.08	27		340
Westinghouse 8"	3.95	.13	31		240
Diehl 8"	3.75	.07	37		565
Emerson 8"	3.50	.08	33		430
Robbins & Myers 8"....	3.45	.14	34		250
Coolspot 8"	3.00	.12	33		275
Ward's 8"	2.98**	.09	40		460
Master 8"	2.77	.09	36.5		410
Cold Wave 8".....	1.49**	.10	43		430
Polar Cub 8".....	1.39	.12	44		360
K-M Moderne 8".....	1.29	.06	31		490
Westinghouse 16" d-c ***	—	.83	52		63

*Note that a high figure means a low efficiency and vice versa.

**Plus postage.

***A model several years old, included in test for comparison only; no longer available.

size, with second best efficiency. Quiet. Guard gave adequate protection. Sample tested showed a slight possibility of shock hazard under conditions of high humidity.

Also Acceptable (In estimated order of merit)

Coolspot Model 218 (Signal Electric Mfg. Co., Menominee, Mich.). \$3. Output fair, efficiency better than average. Less quiet than average. Guard satisfactory.

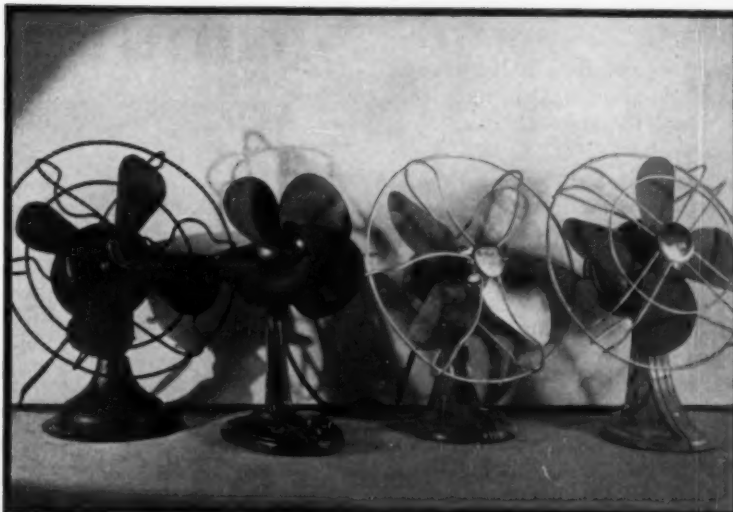
Westinghouse Model 8SFN3 (Westinghouse Electric and Mfg. Co., Springfield, Mass.). \$3.95. Output high for size, efficiency best of all tested. Noise average. Guard fair.

General Electric Model 27 X 840 (General Electric Co., Bridgeport, Conn.). \$4.60. Output about average; efficiency slightly better than average. Fairly quiet. Guard fair.

Emerson Model 3140-B (Emerson Electric Mfg. Co., St. Louis, Mo.). \$3.50. Output low, efficiency below average. Noise average. Guard satisfactory.

Samson Safe-flex Model 989 (Samson United Co., Rochester, N. Y.). \$3.95. This fan has 6-inch diameter soft rubber "safety" blades which are judged to give fair protection to the user. Blades of this type are more difficult to balance, and if not carefully balanced will cause annoying vibration. Output below average, efficiency slightly below average. Quiet, but vibrated considerably. A small fan, rated at 20 watts current consumption. The sample tested used 27 watts. Can be clamped to the edge of a table or to a chair if desired. Sample tested showed slight possibility of shock hazard under high humidity conditions.

Diehl Ribbonaire Model 15 (Diehl Mfg. Co., Elizabethport, N. J.). \$9.95. Ribbon-type "safety" blades. Output second best of fans in this group, but efficiency slightly below average. Current consumption highest of this group. Noisier than average, probably owing to design of the special blades—which are judged to offer satisfactory protection against injury. Has 2-speed switch. Neither this fan nor the *Safe-flex* rated above is considered a desirable purchase when compared with others higher in the list, except for safety.



FOUR KINDS OF PROTECTION

1. Protection afforded by an adequate guard (Robbins & Myers). 2. Protection given by soft rubber blades (Samson). 3. Inadequate guard, offering poor protection at rear (K-M Moderne). 4. Inadequate guard, offering poor protection at front (Polar Cub).

Not Acceptable

Diehl Model 8012. \$3.75. Output very low, efficiency poorest of all fans tested. Some vibration; no cushioning felt on base. Bearings skimpy, showed excessive play.

K-M Moderne Model L-21 (Knapp-Monarch Co., St. Louis, Mo.). \$1.29. Output and efficiency both low. Guard gave poor protection against contact with the back of the blades.

Polar Cub Model A18 (A. C. Gilbert Co., New Haven, Conn.). \$1.39. Gave a fair output, but had excessive current consumption. Noisier than average. Guard offered little protection against contact with the rotating blades. Bearings were skimpy; provision for oiling, poor.

Ward's Cat. No. 5335 (Montgomery Ward). \$2.98 plus postage. Output and efficiency both below average. Noise average. Bearings flimsy with poor oiling provision; one oil channel did not conduct the oil to the bearing—evidence of careless assembly and inspection.

The following two fans showed electric insulation failure under high voltage test. Both had skimpy bearings.

Master Model 3110 (Master Electric Co., Dayton, Ohio). \$2.77. Had rubber "safety" type blades molded over a metal base. See notes in the text on these blades.

Cold Wave Type ASU (Chicago Electric Mfg. Co.; sold by Sears Roebuck under Cat. No. 2442). \$1.49 plus postage.

Medium-Size Fans

RATINGS of 10-inch diameter oscillating-type fans. These fans are rated strictly in order of quality. Among the fans in this group, in contrast with those in the previous group, it was found that higher price bought better quality, and that no fans in the group differed greatly in quality from other fans at or near the same price. For those who can afford them, the fans at the top of the list will give the most satisfactory service. All in this group had guards giving adequate protection.

Acceptable

(In order of quality)

General Electric Medium Size Quiet Type Model 49 X 723. \$16.50. Output second highest, efficiency best of all a-c fans tested; met federal specifications on both counts. Quiet, in spite of high performance.

Westinghouse Poweraire Model 10SQ3. \$16.95. Output highest, but efficiency fell just below requirements of federal specifications. Quiet type blades, but noise level was about average for fans tested.

Robbins and Myers Model 5404. \$14.45. Output met federal specifications; efficiency fell slightly below. Quiet type blades; second quietest of all fans in this group tested.

Westinghouse Model 10SF3. \$12.95. Output and efficiency both better than required by federal specifications. Conventional blades, noise level average.

General Electric Model 42 X 548.

\$12.95. Same comments as for *Westinghouse Model 10SF3*. Had provision for taking up wear in the pivots about which the fan oscillates.

Emerson Model 2250-B. \$12.95. Same comments as for *Westinghouse Model 10SF3*.

Signal Model 450A. \$12.75. The only fan tested designed for use on either a-c or d-c. On d-c it had higher output and efficiency than any of the a-c fans tested. On a-c both are somewhat reduced but still meet specification requirements. Noisier than average due to motor construction. Had 2-speed switch. Slight radio interference. Motor brushes were round, a less desirable construction than square ones but not a serious defect. Sample tested showed a slight possibility of shock hazard at high humidity. Purchase of this fan advisable only for those who may need a universal current fan.

Ward's Cat. No. 5337 (Montgomery Ward). \$6.95 plus postage. Output and efficiency were both low for fans in this group; both below federal specification requirements. Noise higher than average, with pronounced hum from the blades.

Standing Fans

ONLY one fan of the pedestal (standing) type was included in this test, as most of the higher-priced fans listed can be purchased with pedestal if desired. The *Sears' Airflow* was selected because it was priced much lower than other pedestal-type fans.

Acceptable

Sears' Airflow Type ASUF (Chicago Electric Mfg. Co.; sold by Sears Roebuck under Cat. No. 2482). \$9.95 plus postage. Output and efficiency both fail to meet federal specifications, although both were better than those of any 8-inch fans tested. Quiet. Pedestal mounting of adjustable height. Guard gave adequate protection, but was not rigidly fastened to the motor and its mounting may be easily bent. This fan compared with *Ward's Cat. No. 5337*; output was slightly lower. Sample tested showed a slight possibility of electric shock hazard at high humidity.

Sunburn Preventives



The effectiveness of any preventive depends on a combination of factors—your skin is one.

CERTAIN people cannot acquire a tan. Their ranks include all albinos, most redheads, some blonds, and a few brunettes. And for them the problem that the summer sun poses is a simple one: they must either stay out of it or else use a sunburn preventive which gives complete protection. CU's tests of sun oils, lotions, and creams disclosed one that gave almost complete protection.

For the great bulk of sunbathers, however—those who can acquire a tan and set out diligently to do so—complete protection is no particular virtue. For these, the answer is reliable partial protection—a preventive that guards normal skin against painful burn as it acquires a gradual tan. Three preventives emerged in this category after CU completed its tests. Five others stood up as fair, probably good enough to help prevent blistering. Fourteen brands either gave no protection or were too unreliable to be counted as "Acceptable."

The effectiveness of any sunburn preventive depends on a combination of five factors: the concentration and effectiveness of the chemical in the substance used, the amount applied, the length of exposure, the quality of the sun's rays at the time of exposure, and the skin's susceptibility. Obviously, different users, by varying the amount and exposure, can get different results. The effectiveness of the sun-

burn preventives tested by CU was determined by actual exposure tests under controlled conditions on staff members.

THE best preparation for maximum protection as thus determined was a *Salol* ointment recommended by *Health & Hygiene* which can be compounded by a druggist for about 65c (see formula in listings).

A very sensitive skin will be kept from burning by this mixture. And a person with a normal skin can use it and still get a tan by exposing himself for half an hour or so unprotected and then covering himself thoroughly. But it has two drawbacks: it is very greasy, and its odor may be objectionable.

Most effective of this year's trade preparations is *Dorothy Gray Sunburn Cream*, non-greasy but expensive. The manufacturers of *Mulsitan*, last year's "Best Buy," decided that its effectiveness killed off too large a market of tan-hunters. *Mulsitan* is now less potent, and rates as a good partial protector.

Preparations are grouped below according to protective value. Past experience should serve as sufficient guide in choosing a preparation of proper strength. Even if a sunburn preventive is used, you will be well advised to start with short exposures, lengthening them gradually. Extreme exposure to the sun can cause not only

sunstroke but certain types of skin diseases. Various ingredients used in sunburn preventives may be irritating to the skin of a few people who are especially sensitive to them. If you find a sunburn preventive irritating, change to another "Acceptable" brand.

All lotions should be applied generously and renewed each hour and after each swim. The *Salol* ointment will not wash off easily in the water.

Ratings are only relative; over-exposure should be avoided.

Acceptable

(In approximate order of cost within each group)

Best protection for sensitive skin:

Salol Ointment (prepared by druggist). Should be about 65c for 3½ ounces. Formula: 10 grams *Salol*; dissolve in least possible amount of liquid petrolatum or albolene; make up to 100 grams of ointment in anhydrous lanolin. Very greasy. Odor may be objectionable.

Good protection for "normal" skin; should keep sensitive people from blistering:

Mulsitan (R. L. Watkins Co., NYC). 45c for 2 fl. oz. Not very greasy.

Skol (Skol Co., NYC). 50c for 2 fl. oz. Invisible film. Alcoholic solution. May irritate a sensitive skin.

Dorothy Gray Sunburn Cream (Dorothy Gray Salons, NYC). \$1 for 4 fl. oz. Makes invisible film.

Partial protection; should prevent blistering but results inconsistent:

Gypsy Sun Tan Cream (United Drug Co., Boston). 60c for 4 fl. oz. Not greasy. Get at Liggett stores. (Liquid *Gypsy Tan* is "Not Acceptable.")

Samoa Oil (Lorr Laboratories, Inc.). 33c for 2 fl. oz. Greasy. Get at Whelan drug stores.

Ardena Sun-pruf Cream (Elizabeth Arden). \$1 for 3 oz. Invisible film.

CD Sunburn Lotion (Cooperative Distributors, 30 Irving Place, NYC). 50c for 8 oz. Not greasy. Slightly tannish film.

Gaby Greaseless Suntan Lotion (Gaby, Philadelphia). 50c for 4 fl. oz. Invisible film.

Not Acceptable

Gave only fair results on some

skins; they are not consistently reliable. A few gave no protection at all.

Miami Tan Sun Oil (Hampden Sales Assn.). 10c for 2 fl. oz.

Bo-kay Solidified Sun Tan Oil (Bo-kay Laboratories). 10c for 1½ oz.

Mystic Non-oily Suntan Lotion (Mystic Laboratories). 10c for 2 fl. oz.

Mystic De Luxe Suntan Oil. 10c for 2 fl. oz.

Noburn Sun Tan Lotion (Chemical Specialties Co.). 19c for 2 fl. oz.

Plat-Num Sun Tan Oil (Plat-Num Laboratories). 25c for 2½ fl. oz.

Gypsy Tan. 50c for 4 fl. oz.

Saybrooke Sun Oil (R. H. Macy). 84c for 6 fl. oz.

Sunfoe Lotion (Schieffelin & Co.). 45c for 3 fl. oz.

Conti Beach-Tan Oil (Conti). 15c for 1 fl. oz.

Noxzema Suntan Oil (Noxzema Chemical Co.). 50c for 3 fl. oz.

Helena Rubinstein Sun-Tonic (Helena Rubinstein). \$1 for 4 oz.

Norwich Sun Tan Oil (Norwich Pharmacal Co.). 40c for 1½ fl. oz.

Helena Rubinstein Sunproof Cream. \$1 for 2 fl. oz.

• 1. The best way to preserve the color of green vegetables with least loss of nutritive qualities is to:

- Cook them in a large amount of water.
- Add soda to the water.
- Chill them before putting them on to cook.
- Leave the pan uncovered for a few minutes after boiling starts.
- Put a teaspoonful of Alka-Seltzer in the water.

• 2. The better and more efficient a mechanical refrigerator is, the more rapidly it freezes ice cubes.

• 3. While foods and drinks sold at beaches and resorts generally show a high bacteria count, this does not necessarily mean that they are harmful.

• 4. If a shoe manufacturer should tell you that he has to charge you more for shoes because he has to pay more for labor, you would be justified in saying to him:

- "True—but you oughtn't to pay more for labor."
- "More power to you; higher prices mean prosperity."

FACT or FABLE?

This is a game for consumers and an educational test as well. Mark the following statements true or false. Then see page 28 for answers.

If you get 8 or more right you can give yourself an A.

c. "But you've raised prices twelve times as much as wages."

d. "You can say what you want to, but I know you aren't actually paying more for labor."

e. "Well, whatever you say must be right; you know your business."

• 5. If you send your shirts to a commercial laundry, you will get about as much wear out of a \$1.50 one as you will from a \$3 one.

• 6. A wringer for drying clothes is more dangerous than a spinner, but it's also more effective.

• 7. The difference between hydrous (containing water) and anhydrous lanolin is that the former is a good skin lubricant and the latter isn't.

• 8. A number of leading New York department stores—including Bonwit Teller, Arnold Constable, McCreery, and Gimbel's—have figured importantly in recent consumer news by:

- Announcing that they will hold no more special or seasonal sales.
- Signing agreements with the Federal Trade Commission to stop misleading labeling of rayon dresses.
- Forming a group to fight price maintenance laws.
- Agreeing to hold down price increases through the summer months.
- Opening collective bargaining negotiations with their employees.

• 9. The proportionately higher prices that Fords and Chevrolets command in the used car market are in general made up by lower upkeep and operating costs.

• 10. Nail polish removers are among the few commercial cosmetic preparations the manufacturing cost of which justifies their price.



SUMMER GASOLINE

Tests of 67 Samples Reveal That You Do Not Have to Buy Premium or Leaded Gasoline to Get a Satisfactory Fuel for Your Car



IN ORDER to obtain a more complete cross-section of gasolines sold throughout the country, the number of samples included in CU's tests this year was more than doubled over those included in last year's study. Eight samples from the East Coast, 12 from the East Central States, 17 from the North Central, 15 from the South, and 15 from the West Coast—a total of 67—are herein reported on. Changes in the quality of particular brands are noted in the listings.

The gasolines covered this year for the first time were largely regular ("second") grades. As before, an effort was made to take in all widely sold third grades. One premium ("first") grade gasoline was included, for purposes of comparison. This was a sample of *Esso*, bought in the East Coast area where few third grade gasolines are available. The one third grade gasoline from the East (*Sinclair*) was priced at 20c, a cent higher than several of the regulars. Apparently, this illogical pricing is consistent with a general policy in the East to dissuade the motorist from using the cheaper grades. It is our understanding that trucking and bus companies get a special price on these third grade gasolines for use in their regular service.

As previously, tests of the gasolines covered the following points: (1) percentage of gasoline distilled over at specified temperatures, (2) gum content, (3) corrosiveness, (4) tendency to knock. From these data it is possible to estimate how the average automobile will perform on any of the gasolines tested, in usual summer weather. The ratings given later are based on the general performance items as estimated from these tests.

THE semi-annual gasoline surveys of the Bureau of Mines show that the knock ratings of regular gasolines throughout the country are with rare exceptions quite close to a 70 octane number, which is satisfactory for the average automobile. CU verified this information by testing the anti-knock rating of some of the regular grade gasolines, and found all to be between 69 and 71 octane number. Third grade gasolines were known to vary widely in this regard, so anti-knock ratings were made on all such gasolines.

"Best Buys" in third grade gasolines were found in all areas except the east and east central sections of the U. S. Even in these areas at least one third grade was found that could be listed as "Also Acceptable."

Greatest savings on gasoline can be made by using a third grade gasoline when one can be found which is satisfactory, and by adjusting the carburetor on your car to obtain the most efficient operation of the engine. Most modern cars no longer have carburetors adjustable over the driving range; if you wish to obtain highest efficiency it is usually necessary to install smaller jets. This procedure is generally satisfactory for the summer months, but it may be desirable to replace the large jet (to get a richer mixture) during the winter season.

WE continue to advise that non-leaded gasolines be used where possible. In addition to the third grades, several regular gasolines do not contain lead, notably *Sunoco*, *Super Shell*, and *Amoco*. Even though the U. S. Public Health Service has claimed to have found no harmful effects from the exhaust fumes given off by engines in which leaded gasolines are burned, it remains possible that hazards are

involved which have not as yet been detected. We quote from *Toxicology or The Effects of Poisons* by Frank P. Underhill:

"In the use of tetraethyl lead two dangers of poisoning arise (1) the action of tetraethyl lead itself, (2) the absorption of particles of lead compounds thrown out through the exhaust of automobiles.

"Tetraethyl lead itself is extremely toxic being absorbed both through the lungs and the skin. During the manufacture of the compound a number of deaths have occurred. The most noteworthy symptoms of the action of tetraethyl lead indicate a stimulation of the central nervous system. In severe acute cases there may be manic delirium with suicidal tendencies. The chronic symptoms are those of chronic lead poisoning."

Those persons who wish to obtain non-leaded gasolines for their automobiles—and also stoves, lamps, and camping equipment—are referred to United Laboratories, 240 North St. Francis Street, Wichita, Kansas.

The prices given below include the federal tax and the state tax levied where the sample was purchased.

East

Best Buys

Mobilgas Regular (Socony Vacuum Oil Co., NYC). 19c. Contained lead. Some tendency to dilute crankcase oil. Other qualities satisfactory.

Tydol Regular (Tide Water Oil Co., NYC). 19c. Contained lead. Contains oil, which, in spite of advertising claims, is of doubtful advantage. Other qualities satisfactory.

Also Acceptable (In order of merit)

Sunoco Regular (Sun Oil Co., Philadelphia). 19c. Contained no lead. Some tendency to vapor lock.

Esso Premium (Colonial Beacon Oil Co., Inc., NYC). 23c. Contained lead. The only premium gasoline tested and best of the gasolines tested in this area, but not worth the extra price.

Sinclair Regular (Sinclair Refining Co., NYC). 21c. Contained lead. Some tendency to vapor lock.

Amoco Regular (American Oil Co., Baltimore). 19c. Contained no lead, benzol blend. Some tendency to vapor lock.

Gulf Regular (Gulf Refining Co., Pittsburgh). 19c. Contained lead. Some tendency to vapor lock.

Sinclair Third Grade. 20c. Some tendency to vapor lock. Anti-knock rating, 61, satisfactory.

East Central

Best Buys

Farm Bureau Regular (Columbus Consumers Cooperative, 2057 N. High St., Columbus, Ohio). 18c. Contained lead. Satisfactory in all other qualities.

Mobilgas Regular (Socony Vacuum Oil Co.). 18c. Contained lead. Satisfactory in all other qualities.

White Rose Regular (National Refining Co., Cleveland). 18c. Contained lead. Satisfactory in all other qualities.

Also Acceptable (In order of merit)

X70 Regular (Standard Oil Co. of Indiana, Chicago). 18c. Contained lead. Some tendency to dilute crankcase oil.

Sunoco Regular. 18c. One of the few regular gasolines which contained no lead. Some tendency to dilute crankcase oil.

White Flash Regular (Atlantic Refining Co., Philadelphia). 18c. Contained lead.

Super Shell (Shell Eastern Petroleum Co., NYC). 18c. Contained no lead. Some tendency to vapor lock.

Co-op Regular (Producers Co-op Oil

Co., Columbus, Ohio). 16½c. Contained no lead. Some tendency to dilute crankcase oil. Excessive tendency to vapor lock.

Co-op Third Grade. 14½c. Excessive tendency to vapor lock. Some tendency to dilute crankcase oil. Anti-knock rating, 67, satisfactory.

Not Acceptable

Renown Third Grade (Standard Oil Co. of Indiana). 16½c. Below average in acceleration. Anti-knock rating, 51, too low for high-compression engines.

Metro Third Grade (Socony Vacuum Oil Co.). 16½c. Anti-knock rating, 49, too low for high-compression engines.

Royal Third Grade (National Refining Co.). 16½c. Anti-knock rating, 49, too low for high-compression engines.

North Central

Best Buys

Metro Third Grade (Socony Vacuum Oil Co.). 18.7c. Contained no lead. Anti-knock rating, 58, somewhat low, but probably satisfactory for all engines except those of the highest compression ratio. Some

tendency to dilute crankcase oil. Other qualities satisfactory.

Stanolind Third Grade (Standard Oil Co. of Indiana). 18½c. Contained no lead. Anti-knock rating, 57, somewhat low, but probably satisfactory for all engines except those with the highest compression ratio.

Super Shell Regular (Shell Petroleum Corp., St. Louis). 20c. Contained lead.

Also Acceptable (In order of merit)

Mobilgas Regular (Socony Vacuum Oil Co.). 20c. Contained lead.

Red Crown Regular (Standard Oil Co. of Indiana). 20c. Contained lead.

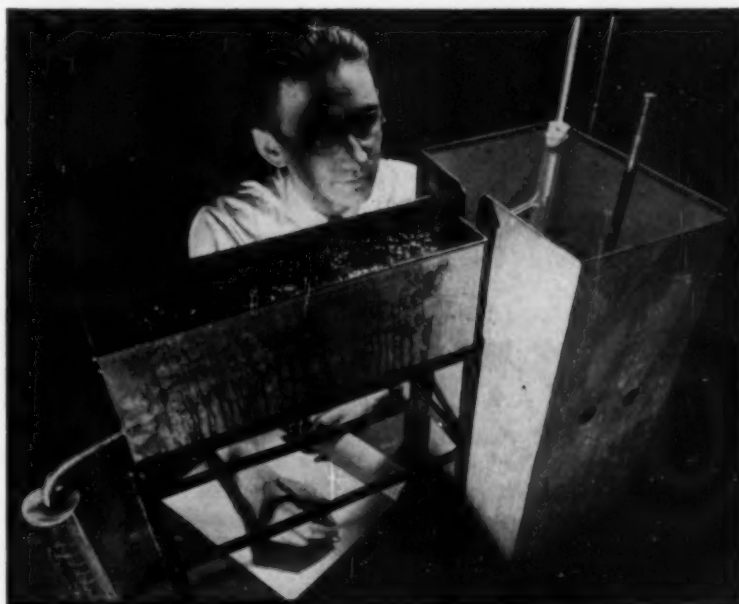
Purol Pep Regular (Pure Oil Co., Chicago). 20c. Contained lead.

Skelly Regular (Skelly Oil Co., Tulsa, Okla.). 20c. Contained lead.

Phillips 66 Regular (Phillips Petroleum Co., Bartlesville, Okla.). 20c. Contained lead. Some tendency to vapor lock.

Koolmotor Regular (Cities Service Oil Co., Bartlesville, Okla.). 20c. Contained lead. Some tendency to vapor lock.

Texaco Fire Chief Regular (The Texas Co., Des Moines). 20c. Contained lead. Some tendency to vapor lock.



TEST FOR DISTILLATION OF GASOLINE

The gasoline vapor is condensed in tube immersed in ice bath. The operator will note the temperatures corresponding to percentage of gasoline distilled over.



CU PHOTO

Co-op Regular (Midland Cooperative Wholesale, St. Paul). 20c. Contained lead. Some tendency to vapor lock.

Silver Shell Third Grade (Shell Petroleum Corp., St. Louis). 18½c. Anti-knock rating, 54, low for most high-compression engines.

Cities Service Third Grade (Cities Service Oil Co.). 18½c. Some tendency to dilute crankcase oil. Anti-knock rating, 54, low for most high-compression engines, but much better than sample from Middle West tested last year.

Phillips Unique Third Grade (Phillips Petroleum Co.). 18½c. Some tendency to dilute crankcase oil. Anti-knock rating, 53, too low for most high-compression engines.

Skelly Powermax Third Grade (Skelly Oil Co.). 18.6c. Some tendency to dilute crankcase oil. Anti-knock rating, 52, too low for most high-compression engines.

Texaco Indian Third Grade (The Texas Co.). 18½c. Some tendency to dilute crankcase oil. Anti-knock rating, 52, too low for most high-compression engines. This sample slightly better than one from Middle West tested last year.

Not Acceptable

Co-op Competitive Third Grade (Midland Cooperative Wholesale). 18½c. Some tendency to dilute crankcase oil. Excessive tendency to vapor lock. Gum content somewhat high. Anti-knock rating, 62, satisfactory. The cooperative claimed sample may have contained winter gasoline. This would account in part for poor showing.

South

Best Buys

Sinclair U. S. Motor Specification Third Grade. 20c. Satisfactory in all qualities. Anti-knock rating, 63, satisfactory.

Acto Third Grade (Standard Oil Co. of La., New Orleans). 20½c. Satisfactory in all qualities. Anti-knock rating, 65, satisfactory.

Also Acceptable (In order of merit)

X-Cel Third Grade (Pure Oil Co.).

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21c. Gum content somewhat high. Anti-knock rating, 60, satisfactory.

Texaco Indian Third Grade (The Texas Co., NYC). 20c. Some tendency to dilute crankcase oil. Anti-knock rating, 55, somewhat low but probably satisfactory for all but the highest-compression engines.

Cities Service Third Grade (Cities Service Oil Co.). 21c. Anti-knock rating, 56, somewhat low but probably satisfactory for all but the highest-compression engines.

Spur Third Grade (Henry Cross Refining Co., Eldorado, Ark.). 20c. Some tendency to dilute crankcase oil. Gum content high. Some tendency to vapor lock. Anti-knock rating, 68, exceptionally high for third grade.

Koolmotor Regular (Cities Service Oil Co.). 24½c. One of the two best gasolines tested.

Super Shell Regular (Shell Petroleum Corp.). 24½c. Contained no lead.

Sinclair H. C. Regular (Sinclair Refining Co.). 24½c. Contained lead.

Essolene Regular (Standard Oil Co. of La.). 24½c. Contained lead.

Texaco Fire Chief Regular (The Texas Co.). 24½c. Contained lead.

Good Gulf Regular. 24½c. Contained lead. Some tendency to vapor lock.

Woco Pep Regular (Pure Oil Co.). 24½c. Contained lead. Some tendency to vapor lock.

Not Acceptable

Gulf Third Grade (Gulf Refining Co.). 21c. Bad corrosion. Anti-knock rating, 57, low.

Silver Shell Third Grade (Shell Petroleum Corp.). 20½c. Bad corrosion. Anti-knock rating, 56, low.

West Coast

Best Buys

Texaco Indian Third Grade (The Texas Co., Los Angeles, Calif.). 16½c. Acceleration below average. Some tendency to dilute crankcase oil. Satisfactory in all other qualities. Anti-knock rating, 65, satisfactory. Sample much superior to that from Middle West tested last year.

Summer MOTOR OILS

Best Buys

- A-Penn** (A-Penn Oil Co.). 13.6c in 2-gal. lots.
Penn-Rad (Radbill Oil Co.). 13.4c in 2-gal. lots.
Travelene (Strauss Stores Corp., NYC). 16.4c in 2-gal. lots.
Ward's 100% Pure Pennsylvania (Montgomery Ward mail order and retail stores). 17.4c plus postage in 5-qt. lots.
Penn-Coop (for nearest distributor in eastern states, write Eastern Co-operative Wholesale, NYC; in central states, write Midland Co-operative Wholesale, Minneapolis, Minn.). About 18c in 2-gal. lots.
Good Penn (Western Auto Supply Co.). 18c.
Firestone Penn-Sentinel (Firestone Tire & Rubber Co.). 18.5c in 2-gal. lots.
G.L.F. Penn (for nearest distributor write Cooperative GLF Soil Building Service, 21 West St., NYC). 19.5c in 2-gal. lots.
Cross Country (Sears Roebuck retail stores). 20c in 5-qt. cans.

Also Acceptable

Oils marked by an asterisk are pure paraffin base oils. Oils priced above 25c a quart are considered too expensive.

- Emerald** (Sinclair Refining Co.). 12.5c in 2-gal. lots.
Macy's Re-refined (R. H. Macy & Co., NYC). 13.6c in 2-gal. lots.
Premium* (Canfield Oil Co.). 25c.
RPM (Standard Oil of Calif.). 25c.
Tydol (Tide Water Oil Co.). 25c.
Gulflube (Gulf Refining Co.). 25c.
Lubrite (Socony-Vacuum). 25c.
New Texaco (The Texas Co.). 25c.
Linco (Ohio Oil Co.). 25c.
Atlantic (Atlantic Refining Co.). 25c.
Amoco (American Oil Co.). 25c.
Opaline (Sinclair). 25c.
Golden Shell* (Shell Oil Co.). 25c. (Sample purchased in East.)
Essolube (Colonial Beacon). 25c.
En-ar-co (National Refining). 26c.
Lion Head* (Gilmore Oil Co.). 30c.
Mobiloil* (Socony-Vacuum). 30c.

Gilmore Blu-Green Third Grade (Gilmore Oil Co. of Calif., Los Angeles). 16½c. Acceleration below average. Some tendency to dilute crankcase oil. Satisfactory in all other qualities. Anti-knock rating, 64, satisfactory.

Flight Third Grade (Standard Oil Co. of Calif., San Francisco). 16½c. Acceleration below average. Some tendency to dilute crankcase oil. Anti-knock rating, 64, satisfactory.

Flash Third Grade (Richfield Oil Corp., Los Angeles). 16½c. Some tendency to dilute crankcase oil. Anti-knock rating, 63, satisfactory.

Peerless Third Grade (Signal Oil and Gas Co., Los Angeles). 16½c. Acceleration below average. Some tendency to dilute crankcase oil and to vapor lock. Anti-knock rating, 63, satisfactory.

Also Acceptable (In order of merit)

White Gold Third Grade (Associated Oil Co., San Francisco). 16½c. Acceleration below average. Some tendency to dilute crankcase oil. Anti-knock rating, 62, satisfactory.

White Magic Third Grade (Union Oil Co. of Calif., Los Angeles). 16½c. Some tendency to dilute crankcase oil. Anti-knock rating, 62, satisfactory.

Super Economy Regular (Wilshire Oil Co., Los Angeles). 17c. Contained no lead. Some tendency to dilute crankcase oil and to vapor lock.

Texaco Fire Chief Regular (The Texas Co.). 18c. Contained lead.

Richfield Hi-Octane Regular (Richfield Oil Corp.). 18c. Contained lead. Some tendency to vapor lock.

Standard Regular (Standard Oil Co. of Calif.). 18c. Contained lead.

Union 76 Regular (Union Oil Co. of Calif., Los Angeles). 18c. Contained lead. Some tendency to vapor lock.

Signal Regular (Signal Oil and Gas Co.). 18c. Contained lead.

Flying A Regular (Associated Oil Co.). 18c. Contained lead. Acceleration below average.

Economy Third Grade (Wilshire Oil Co.). 15½c. Acceleration below average. Some tendency to dilute crankcase oil. Gum content high. Anti-knock rating, 66, good for third grade.

ONLY SAE 30 oils are reported here. Such oils are generally satisfactory for summer use provided piston clearance is not so great as to cause noticeable "slap"; in that case a heavier oil is needed. Recent tests indicate that more satisfactory lubrication is obtained with the lighter oils—a fact particularly true with modern high-compression engines.

Considerable savings can be made by buying oil in quantities of from two to five gallons and putting it in the crankcase as needed. Keep the crankcase properly filled, changing the oil completely only with the change in seasons, when a light oil must be substituted for a heavy, or vice versa.

Service-station attendants can easily misread the oil level by failing to insert the measuring rod all the way; it is safer to read it yourself, especially at a strange station. If the crankcase is filled too full, some of the oil will be wasted.

Driving done under particularly dusty conditions will make it advisable to drain the oil at intervals of about 2,000 miles, unless an oil filter is used and kept in good condition. Drain the oil immediately after the engine has been running for a while; allow it at least three hours to settle; then pour back into the engine all except the bottom quart.

A number of the oils tested in 1936 and 1937 carried the seal of the Pennsylvania Grade Crude Oil Association on the containers—an oval-shaped seal giving the permit number of the refiner. All oils examined that bore this seal have been found to be of pure paraffin base.

The outstanding change from the 1936 ratings is provided by *Texaco*; the quality of that oil—now called *New Texaco*—has been considerably improved. Both *Penn-Rad* and *Penn-zoil* now meet SAE 30 specifications.

Remember that oil consumption increases very rapidly as speed is increased above 40 miles an hour.

The prices given below are for quart purchases (federal tax included) unless otherwise stated. All oils rated as "Best Buys" are pure paraffin base.

Monogram* (New York Lubricating Oil Co.). 30c.

Shell-Penn* (Shell Oil Co.). 30c.

Sinclair Pennsylvania* (Sinclair). 30c.

Tioline* (Pure Oil Co.). 30c.

Veedol* (Tide Water). 30c.

Havoline (Texas). 30c.

Richfield (Richfield Oil Corp.). 30c. (Sample purchased in East.)

Triton (Union Oil Co. of Calif.). 30c.

Alemite* (Alemite Corp.). 35c.

Gulfpride* (Gulf). 35c.

Kendall* (Kendall Refining). 35c.

Koolmotor* (Cities Service Co.). 35c.

Quaker State* (Quaker State Oil Refining Corp.). 35c.

Pennzoil* (Pennzoil Co.). 35c.

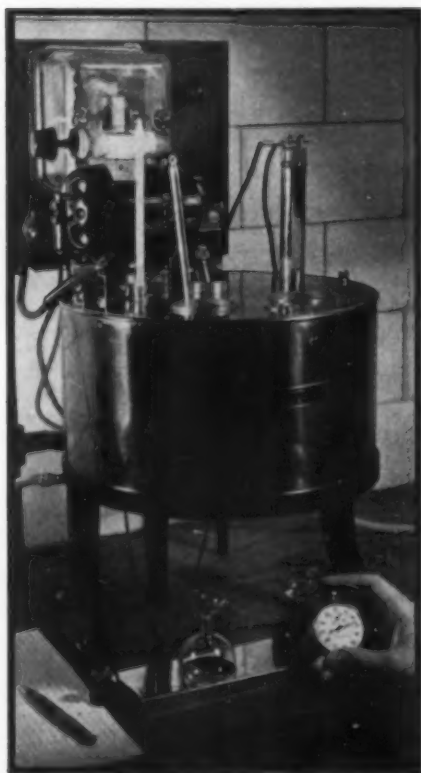
Valvoline* (Valvoline Oil Co.). 35c.

Wolf's Head* (Wolverine-Empire Refining Co.). 35c.

Esso No. 3 (Colonial Beacon). 35c.

Not Acceptable (Quality unsatisfactory)

Midland Coop (Midland Cooperative Wholesale). 20c. (This is *not* the Midland Pennsylvania oil.)



TEST FOR VISCOSITY OF OILS

The oil is held in cups immersed in thermostatically controlled bath, and flows out of orifice at bottom into flask. Stopwatch determines time of flow of measured amount.

Ring-Free (Macmillan Petroleum Corp.). 35c.

Prize (Paragon Oil Co.). 25c.

Argoil (Argoil Petroleum). 25c.

Labor and the Oil Companies

SEVERAL weeks ago Consumers Union sent letters to 24 oil companies, asking for information on working conditions, wages, and relations with organized labor. One answer was received.

It was probably no coincidence that our solitary correspondent was the Sinclair Refining Company, which enjoys high standing with the International Association of Oil Field, Gas Well and Refinery Workers of America. B. J. Schafer, vice-president of this union, has provided data on several other oil companies. Other facts have come from the hearings of the La Follette subcommittee on violations of free speech and labor rights.

Cities Service—The labor policy of this company is rated "quite high" by the union. Collective bargaining agreements cover "practically every property" of Cities Service where oils and gasolines are produced or refined.

Farm Bureau—This brand is retailed by the Columbus (Ohio) Consumers' Cooperative, Inc., whose secretary-treasurer, Gardner Lattimer, writes that "we are committed enthusiastically to the support of organized labor." Although Columbus is an open shop town (but "changing somewhat"), the cooperative employs only union filling-station attendants and one of its stations is attended by the president of the local union. Incidentally, one of the cooperative's trustees is an officer of the Ohio State Federation of Labor and another is a CIO organizer.

Gulf—This Mellon-made gasoline is produced under non-union conditions. Gulf Refining Company is offering strong resistance to organizing activities, and has employed Pinkerton's National Detective Agency, the notorious labor-spy service.

Shell—Most of the major refining properties of Shell Oil Company are operated under union agreements, with the exception of those in California. There a company union has finally been dissolved by order of the National Labor Relations Board. (Like

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Valor (Texas). 13.8c in 2-gal. lots.

Cycol (Associated Oil of Cal.). 25c.

Guardian (Pure Oil Co.). 15c.

Sunoco (Sun Oil Co.). 25c.

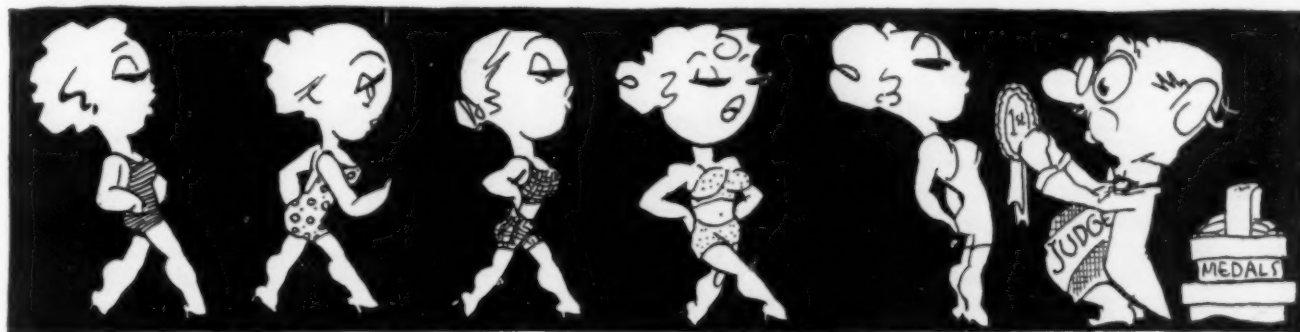
Gulf, the Shell company has found a use for Pinkerton operatives.) In Woodriver, Ill., Shell has signed an agreement with international unions of the Metal Trades Department of the A. F. of L.

Sinclair—Since 1934 the Sinclair companies have operated under a national contract with the Oil Workers Union. The 25,000 employees have a 36-hour week, time-and-one-half pay for overtime, one week's vacation with pay after a year's service and two weeks' vacation after two years. The company estimates that the average monthly wage is \$144, including common labor at 70 cents an hour and skilled labor at a maximum of \$1.31½. The union agreement, printed in a 16-page pamphlet (with a union label), has elaborate provisions for seniority and promotions. A voluntary check-off for union dues payments is provided. Any employee "who is required to work more than one hour past a regular meal time shall, at the employer's expense, be supplied with a meal and afforded an opportunity to eat same." Another interesting section gives employees the right to take a leave of absence up to one year for union business without losing their service rating.

Standard—The Standard Oil Company, its subsidiaries and interlocking companies remain staunch enemies of organized labor. Singled out by the Oil Workers Union for listing as "extremely unfair" are Humble Oil, Magnolia Petroleum, and American Oil (a subsidiary of Pan-American Petroleum, which in turn is a subsidiary of Standard Oil of Indiana). In California, Standard Oil has made sizable purchases of tear and sickening gas and gas equipment from the Lake Erie Chemical Co., presumably for use against its employees.

Sun—The company has promoted its company union by allowing generous expense accounts to employee representatives. Members of the Petroleum Truck Drivers Union, an A. F. of L. affiliate, have urged trade-unionists not to buy Sun products.

BATHING SUITS and TRUNKS



There hasn't been much change from last year to this. No suits or trunks are top grade on all points; but there are good buys in both.

THE change from the bathing suits of two years ago to the bathing suits of last year was a considerable one, and the skirted model dropped out in the course of it. There's been much less change from last year's suits to the newest models. The industry's designers have apparently leveled out their ideas, seeing no possibilities in the direction of further nudity or novelty.

So far as style is concerned, \$1.98 and \$4.98 will bring you much the same thing: a backless, skirtless, sleek-fitting model with molded bra, a novelty knit, and long braided streamers serving as a sort of combined shoulder strap and belt.

For a (very) few swims in a fancy style at a low price, rubber bathing suits are satisfactory. Like rubber, satin lastex doesn't wear.

Linings are becoming more and more popular. Sometimes with the skirtless varieties they are essential to get you past the censors. Sometimes they serve to protect the skin from the harsh wools of the outer fabric. A wool lining is, of course, more desirable than a cotton lining. In the cheaper suits, loosely woven novelty weaves are customarily lined with cotton, at least in front. And these suits are undesirable because they generally have very low resiliency. In better-grade suits, wool jersey linings increase both comfort and resiliency.

PASSING through the men's department one sees little more than piles of trunks, attesting to the fact that local censors are recognizing the

futility of insisting on the apologies for shirts men are now wearing. The shirts can be obtained, but, as last year, they were not stocked in a number of the branded lines. They were therefore not included in CU's tests.

The slight change in construction and quality of this year's models as compared with the models tested last season is surprising, inasmuch as the price of wool has been going up. At the same price as last year the *Jantzen* uses similar coarse yarn and harsh wools; *Wikies* trunks use much the same yarns; the *Nautical Togs* is nearly identical on all counts.

Unfortunately, neither of last year's "Best Buys" could be found under its own brand name this year. *Shepherd's* women's suits and *Wikies* trunks (both at \$3.95) moved up to the top. In view of the general lack of change, it is likely, though not certain, that the *Annette Kellerman* suit and the *Bradley* trunks still have the good wools and strong construction that made them "Best Buys" in last year's tests.

A GOOD suit should have relatively soft wool, strong two-ply yarn construction, a tight knit, good resiliency, dyes fast to sun and water, and good cut and fit. None of the suits

LACK of space resulting from the unusual number of reports on seasonal products has made it necessary to omit "CU's Members Report" from this issue.

tested measured up to top grade on all of these points. Women's suits had softer wools than men's. Men's had stronger yarn construction. Cheaper suits had good fibers but no tightness of knit or resiliency. The most expensive suit tested had very poor colorfastness to sunlight. The cheapest suit tested had the best colorfastness to sunlight.

The suits varied considerably in original dimensions, wherefore it is wise both to know your own dimensions and to make sure that the suit you are considering will stretch comfortably to fit them. Look for a firm, tight weave that will spring back into shape after stretching. Try to combine this quality with a wool soft enough to treat the skin gently.

Reasonable colorfastness is hard to get, especially in women's suits, but it is safe to advise buying a dark color if the suit must last more than one season; light colors are in general more susceptible to fading.

Women's Suits

Best Buy

Shepherd (Shepherd Knitwear Co., NYC.). \$3.95. Skirtless, with fitted bust and square neckline. Suit entirely lined with wool jersey. Soft wool, medium-size yarn, fair resiliency; double layer of fabric had very good strength. Royal blue suit tested had fair colorfastness to sunlight, and good fastness to both salt and fresh water.

Also Acceptable (Order has no significance)

Ward's Cat. No.—5028 (Montgomery Ward). \$1.98 plus postage. Skirted, with fitted bust and white straps. Bust lined with cotton jersey. Soft wool, fine yarn, poor resiliency, fair fabric strength. Light blue suit tested had poor colorfastness to sunlight, but good fastness to salt and fresh water.

Nautical Togs Style 225 (Greenhill & Daniell, NYC). \$2.98. Skirtless suit, with fitted top and braided straps. Bust and front panel lined with cotton jersey. Soft wool, medium yarn, fair resiliency; single layer of fabric had fair strength. Royal blue suit tested had poor colorfastness to sunlight, but good fastness to salt and fresh water.

Gantner Model No. 7042 (Gantner & Mattern, San Francisco). \$3.95. Skirted suit, with fitted top, braided straps, and patented "floating bra" of wool jersey. Fairly soft wool; medium yarn, fair resiliency and fabric strength. Royal blue suit tested had poor colorfastness to sunlight and good fastness to salt and fresh water.

Catalina Carol Hughes Style 4574 (Pacific Knitting Mills, Los Angeles). \$5. Skirtless, with fitted top and self straps which button in back. Bust lined with wool jersey. Impregnated silk in crotch. Harsh wool, medium yarn, good resiliency, good fabric strength. Chartreuse suit tested had poor colorfastness to sunlight, and good fastness to salt and fresh water.

Jantzen Sun Burst Mio Style 375 (Jantzen Knitting Mills, Portland, Ore.). \$4.95. Skirtless, with fitted top and braided straps. Lined from waist to crotch in front with wool. Harsh wool and coarsest yarn of all women's suits. But good resiliency, and very good fabric strength. Salmon suit tested had fair colorfastness to sunlight, salt and fresh water.

Not Acceptable

Sears' Sea Ho Cat. No.—1714 (Sears Roebuck). \$1.69 plus postage. Both skirtless and skirted models available. Model bought was advertised as lined throughout with cotton jer-

CHANGE OF ADDRESS

IF YOU intend to move, will you notify CU of the change in address at least two weeks in advance, giving both the old address and the new? This will greatly facilitate mailing problems and assure you of receiving the Reports without interruption.

sey, but suit was lined in front only. Soft wool, fine yarn, poor resiliency, poor fabric strength. Outer fabric had good colorfastness to sunlight and water; but red lining bled badly in both salt and fresh water, staining the white straps and making the entire garment undesirable.

Men's Trunks

Best Buy

Wikies (Gantner & Mattern Co.). \$3.95. False fly front, coin pocket. Heavy elastic supporter. Provision for snap-on shirt. Wide lastex belt. Fairly harsh wool, very good 2-ply yarn construction, good resiliency, very good fabric strength. Royal blue trunks had good colorfastness to sunlight, salt and fresh water.

Also Acceptable

Catalina Mickey Riley (Pacific Knitting Mills). \$4. False fly front, coin pocket. Adjustable worsted knit supporter with built-in lastex threads. Loops for shirt to fasten to. Heavy cotton belt. Softest wool of all trunks tested, coarse 1-ply yarn construction, good resiliency, good fabric strength. Gray trunks had fair colorfastness to sunlight and good fastness to salt and fresh water.

Spalding (A. G. Spalding & Bros., NYC). \$2.95. Coin pocket. Inelastic cotton reinforcement at front, sewed at waist and crotch. No provision for attaching shirt. Good quality belt. Harsh wool, good 2-ply yarn construction, fair resiliency, very

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good fabric strength. Navy blue trunks had very good colorfastness to sunlight, and good fastness to both salt and fresh water.

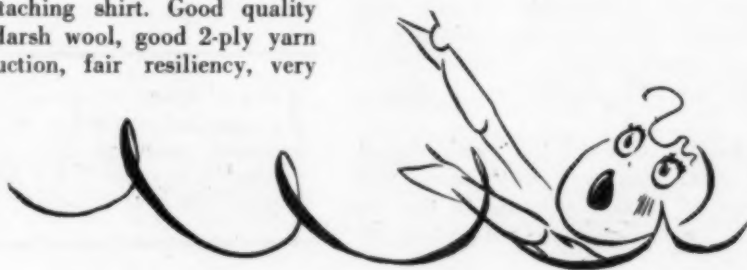
Jantzen Streamliner Style 247 (Jantzen Knitting Mills). \$3.95. False fly front, coin pocket. Inelastic rayon and cotton reinforcement at front, sewed at waist and crotch. No provision for attaching shirt. Heavy lastex belt. Fairly harsh wool, coarse 1-ply yarn construction, good resiliency, very good fabric strength. Royal blue trunks had poor colorfastness to sunlight, and good fastness to salt and fresh water.

B.V.D. Style 35 (The B.V.D. Corp., NYC). \$2.95. False fly front, coin pocket. Poor quality elastic supporter. No provision for attaching shirt. Good quality belt. Harsh wool, coarse 1-ply yarn construction, fair resiliency, good fabric strength. Maroon trunks had good colorfastness to sunlight, salt and fresh water.

Not Acceptable

Sears' Sea Ho Cat. No.—1810 (Sears Roebuck). \$1.98 plus postage (price includes shirt). False fly front. Heavy elastic supporter. Shirt attached by zipper. Poor quality belt. Harsh wool, medium-size 1-ply yarn construction, poor resiliency, good fabric strength. Navy blue trunks had very good colorfastness to sunlight, and good fastness to salt and fresh water.

Ward's Cat. No.—5201 (Montgomery Ward). \$1.09 plus postage. False fly front. Poor quality elastic supporter. Snaps provided for attaching shirt. Poor quality belt. Fairly harsh wool, medium-size 1-ply yarn construction, poor resiliency, fair fabric strength. Royal blue trunks had poor colorfastness to sunlight, and good fastness to salt and fresh water.



Bathing Suit Labor

FACTORIES where bathing suits are made have practically no union organization, and it is probable that wages are correspondingly low. Only one manufacturer answered our request for facts on working conditions.

B. V. D.—The large Baltimore plant producing this brand is non-union.

Catalina—The Pacific Knitting Mills, Los Angeles, informs us that its 175 employees work 48 hours a week and receive time and one-half for overtime. "Learners" are started at \$12 weekly, and advance to \$16.80 at the end of six months. [The learner system, it may be noted, has been gravely abused in many sections of the clothing industry; beginners are often started at wages as low as \$5 or \$6 a week, and by the time they are eligible for a higher rate they are discharged.] The Los Angeles concern estimates that its average weekly wage is \$20.58, a figure sufficiently high to indicate that the pay of executives is included in the calculation. The company has no relationship with organized labor.

Gantner—Efforts to unionize the San Francisco plant of Gantner and Mattern Co. are under way, but the secretary of the San Francisco Labor Council, John A. O'Connell, reports that the labor representatives "are having some difficulty . . . with this firm."

Jantzen—Several attempts to organize the workers in the Jantzen Mills have been unsuccessful, we are informed by Gust Anderson, secretary-treasurer of the Central Labor Council of Portland, Ore. Employees complain that wages are "very low."

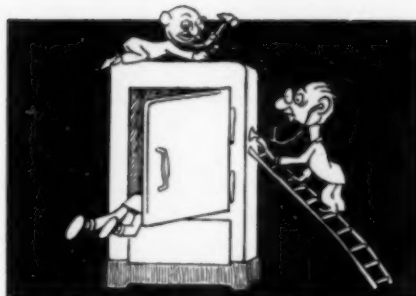
Mickey Riley—See *Catalina*.

Nautical Togs—Non-union; wages compare favorably with those of other non-union shops. The work week is 40 hours (union standard 35).

Sears and Ward—These mail-order brands are purchased by the distributors from various manufacturers. We have no data on the sources.

Shepherd—Both union and non-union suits are sold by this jobber.

Spalding—Organized labor in the vicinity of the Spalding mills regards the company's labor policy as satisfactory, according to Charles W. Short, recording secretary of the Springfield (Mass.) Central Labor Union. The plant is unionized (A. F. of L.).



MECHANICAL Refrigerators

A partial report for members in the market now

STUDIES of mechanical refrigerators, always among the lengthiest and most exacting of the projects carried out by CU, could not be wound up in time to permit a complete report for this issue. In lieu of that, and because of the urgency of the information, CU gives here a partial report, covering ratings of new or significantly changed models of four brands rated last year, and the *Leonard*, not included in the 1936 report.

The August issue of the *Reports* will carry information on a number of other makes. Members who find it necessary to buy refrigerators at once should refer to the listing in the *CU Buying Guide* in conjunction with the ratings below.

Ratings are based on performance under a variety of operating conditions. They take into account the probable effect of future deterioration of insulating materials owing to accumulation of moisture—chief cause of increased operating costs as the machines get older.

Best Buy

Westinghouse FS-60 (Westinghouse Electric and Mfg. Co., Mansfield, Ohio). \$177.50. 6 cu. ft. Refrigerant, Freon. Insulation, balsam wool and other material. Sealed reciprocating compressor. Gave satisfactory and economical performance, with sufficient reserve refrigerating capacity to maintain a temperature of 27° F when running in a room at 120° F. This should be adequate to assure satisfactory refrigeration

under any ordinary loads even after the insulation has undergone considerable deterioration. The efficient performance of this refrigerator suggests basic improvement in construction since last year.

Also Acceptable (In estimated order of merit)

Coldspot D7-716 (Sears Roebuck retail and Gimbel Bros. department stores). \$155. 6.2 cu. ft. Refrigerant, sulfur dioxide. Insulation, Dry Zero. Open rotary compressor. Performed nearly as well as the *Westinghouse* and had satisfactory reserve capacity, but cost of operation was about 30% higher. Because of its lower price it may be as good a buy as the *Westinghouse* where electric energy is very cheap (about 2c per kilowatt hour). This model has been greatly improved over the *Coldspot* model tested last year.

Ward's No. 652 (Montgomery Ward retail). \$144. 6.6 cu. ft. Refrigerant, Freon. Insulation, balsam wool. Open reciprocating compressor. Performed satisfactorily and had satisfactory reserve capacity. At ordinary temperatures, however, its cost of operation was appreciably higher than that of the *Coldspot*. Because the insulation is not satisfactorily sealed against the entrance of moisture, the refrigerator is judged "Not Acceptable" for hot, humid climates.

Leonard LS-60 (Leonard Refrigerator Co., Detroit). \$179.95. 6.1 cu. ft. Refrigerant, Freon. Insulation, corrugated paper material. Open reciprocating compressor. Operating cost high. Performed satisfactorily, but reserve capacity low. "Not Acceptable" for hot, humid climates.

Not Acceptable

Crosley HL-61 (Crosley Radio Corp., Cincinnati). \$199.95. 6.1 cu. ft. Refrigerant, Freon. Insulation, glass wool. Sealed reciprocating compressor. High operating cost. Had difficulty in freezing ice cubes at 110° F outside temperature, and at 120°, its interior temperature exceeded 50° F, although the compressor ran all the time. Reserve refrigerating capacity judged inadequate except at moderate temperature and humidity.

Excerpts from the News

Strike-Breaker

THE record of the McKesson & Robbins Company with its numerous products has not been one to excite the respect of consumers. CU tested *Calox* tooth powder last fall and found it "Not Acceptable" for reasons of both ingredients and price. The same product has been twice investigated by the Council on Dental Therapeutics of the American Dental Association and has been condemned for false advertising claims in the Association's *Journal*. *Ron Rico Rum*, a McKesson & Robbins import, was tested by CU and found to contain free sulfuric acid and manganese. Recently, the Food and Drug Administration reported a judgment of condemnation against the company for making false and fraudulent claims for its *Milk of Magnesia* toothpaste.

In the field of labor relations, we are obliged to report that McKesson & Robbins appears no more trustworthy than it has shown itself to be as a manufacturer and advertiser. Last month, we are informed by the Bookkeepers, Stenographers & Accountants Union (affiliated with the CIO), the company locked out the workers in one of its New York City warehouses. The day before, arrangements had been made for negotiations on collective bargaining. But the lockout put an end to that.

The workers in two other warehouses have since walked out in protest, and the current status is that of a full-fledged strike. The BS&AU has filed a complaint with the National Labor Relations Board; and the company, for its part, has indicated that it will bring in workers from other plants in an attempt to break the strike. CU members who do not like to buy the products of strike-breaking companies may reflect that, in this instance, they will be undergoing no very great deprivation.

Advertising Inventory?

THE American Association of Advertising Agencies, it is our pleasure to report, has begun an inventory of magazine advertising to keep tabs on abuses, unfair claims, etc. And Mr. John Benson, president of the associa-

tion, is in with the first returns. Comparatively few "flagrant" abuses have been discovered, says Mr. Benson. The most frequent offenders, he adds, are the drug and cosmetic industry, the cigarette industry, the food and the motor industries. In the interests of fuller understanding, we should like to clarify Mr. Benson's report a little. The gentlemen taking the inventory are members of the advertising business. And the four industries cited are simply the four biggest users of advertising.

Who Does Your Laundry?

FOR one year—from March of 1936 to March of 1937—investigators for the League of Women Shoppers talked to laundry workers, visited them in their homes, observed them and the conditions under which they worked in more than 40 laundries in the New York City area. A 64-page pamphlet issued by the League last month tells the unhappy story of what the investigators found.*

They found wages as low as \$6 a week for 60 hours of hard work. Wages for all the women interviewed averaged \$13 a week; for the men, \$14.15. Working conditions ranged from poor down to filthy. The in-

*"Consider the Laundry Workers," by Jane Filley and Therese Mitchell; League of Women Shoppers, 220 Fifth Avenue, NYC; 10c.

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investigators found workers who hadn't had a vacation in years. They found even minimum health regulations violated right and left. They found chicanery and intimidation of workers on the part of the employers. They found viciously low living standards among the workers, many of whom had been driven almost to a slave psychology.

Are the conditions representative? The League cites sources beyond its own investigations indicating that they are. And what can be done about them? The League finds the answer partially in legislation (minimum wage laws), but primarily in unionization. Where unions exist, the pamphlet points out, both wages and working conditions are well above average.

It seems obvious that the consumer is directly affected here. She is affected in terms of her family's clothes, which are handled in unclean surroundings by workers whose very poverty means that they are frequently diseased; and in terms of the economic drain that any large mass of wasted, economically impotent people represent in a community. If only for the reason that she is thus affected, the League feels, she should take action.

She should follow and support appropriate legislation. She should patronize unionized laundries. She should talk to strikers and find out their complaints. But first of all, let CU suggest, she should write the League of Women Shoppers, 220 Fifth Avenue, New York City, for a copy of its pamphlet. And she should ask the League—which is experienced in these matters—for details of what she can do.



PHOTOGRAPH BY GREENE AND RICHTER

LAUNDRY WORKERS

The consumer is directly affected

An expert's appraisal of the leading makes and types of miniature cameras

BEFORE you set forth to buy a miniature camera, remember the advice given in last month's *Reports*: don't buy one if you are a beginner in photography, concerned only with taking occasional snapshots. The miniature is a camera for the serious amateur who takes many pictures; who is willing to spend time and care on them; who, preferably, does his own developing and printing and has his own enlarger. This advice applies especially to miniatures, e.g., *Leica*, using motion picture film; less to the miniature reflex cameras, e.g., *Rolleiflex* (which takes pictures $2\frac{1}{4}$ inches square).

There are three general types of miniature cameras. First is the built-in range-finder type, e.g., *Leica*, which permits highly accurate focusing.

Second is the reflex type, in which a mirror is used to reflect the image from the lens to a ground glass. In the twin-lens reflex, there are two separate lenses, one above the other. The mirror is fixed behind the top lens, used solely for focusing. But the focusing of the top lens automatically moves the lower lens into proper focus. Both types of reflex permit accurate focusing.

The third type is the "blind." With these cameras, the photographer ordinarily judges the distance from the camera to whatever is being photographed, and then adjusts the focus by means of a distance scale. This method is inaccurate; the larger the lens opening, the more serious the inaccuracy.

Leica and Contax

OF THE range-finder type, the leading cameras are the Leitz *Leica* and the Zeiss *Contax*. Comparisons here are made between the latest models of both; that is, the Model G *Leica* (\$180 with f:1.5 lens, \$54 with f:3.5) and the *Contax* II (\$180 with f:1.5 lens, \$48 with f:3.5) and *Contax* III. The III differs from the II only in having a built-in photoelectric exposure meter (at \$50 more).

As applied to the *Leica* and the *Contax*, the question, "Which takes the better pictures?" is an idle one. The

Leica and *Contax*
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Other Range-Finder
Cameras Taking
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Range-Finder
Cameras
Taking Film Larger
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Twin-Lens Reflex
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Single-Lens Reflexes
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"Blind" Cameras
Taking
35 mm. Film
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"Blind" Cameras
Taking
Film Larger Than
35 mm.
page 21

best results obtained with a *Leica* and the best results obtained with a *Contax* are both excellent. Some photographers find an elusive, indefinable beauty in the product of an *Elmar* (Leitz) lens which they are unable to find in that of a *Tessar* or *Sonnar* (Zeiss). True, the construction of the *Leitz* lenses is based on formulas differing from those of the *Zeiss* lenses as fitted to the *Contax*. The *Zeiss* lenses tend toward a somewhat harsh brilliance, whereas the *Leitz* objectives possess a pleasing softness which in no way impairs their definition. The differences are slight, however. The resolving power of some of the *Leica* lenses may be slightly greater than that of corresponding *Contax* lenses, but this has no practical significance since the eye cannot detect it in prints. The *Leica* and the *Contax* can safely be considered to be in exactly the same category if we are to judge them by the results obtainable with them. The two cameras do, however, differ in

several secondary structural details, which are worth considering.

1. Shutter Material. The *Contax* metal shutter can be relied upon to last for the life of the camera. It is not affected by adverse climatic conditions. It cannot easily be damaged.

The *Leica* rubberized cloth shutter may require renewal after several years of use. It can more easily be damaged by accident or careless handling than the *Contax* shutter. The cloth may lose its resiliency and crack or give inaccurate shutter speeds if left unused over a long period of time, particularly in humid climates, but will last indefinitely with ordinary careful use in temperate climates.

2. Shutter Speeds. The slowest speed on the *Leica* is 1 second; the slowest on the *Contax* is $\frac{1}{2}$ second. The *Contax* II and III provide the automatic speed of approximately one second if the shutter is set at B, and the built-in self-timer is used. Time exposures can be obtained with either

MINIATURE



CAMERAS

camera. The shortest speed on the *Leica* is $\frac{1}{1000}$, the *Contax* $\frac{1}{1250}$; the slightly higher *Contax* speed is seldom of value.

3. **Shutter: Speed Dials.** There is but one speed dial to operate on the *Contax*; two on the *Leica*. Any diminution of complexity is desirable, and here the *Contax* scores. The top dial on the *Leica* must be set at 20 ($\frac{1}{20}$ second) in order to operate the slow-speed dial on the face of the camera. On the *Contax* II and III all the speeds are engraved on a single dial.



CONTAX III

"Continuous" speeds between 1 second and $\frac{1}{20}$ second are obtainable on the *Leica*, but, since intermediate speeds other than $\frac{1}{2}$, $\frac{1}{4}$, and $\frac{1}{8}$ second are not marked on the dial, it is a matter of guesswork to obtain accurately a speed between any pair of those marked.

The *Leica* shutter has the advantage of being much quieter than the *Contax* shutter, at all speeds. The appreciably greater weight of the *Contax* makes it easier to hold the camera steady and to use the slow shutter speeds of $\frac{1}{10}$ and $\frac{1}{5}$ second without blur.

4. **Lens Mount.** The *Contax* bayonet mount is favored as compared with the screw-thread mount of the *Leica*. The former permits *Contax* lenses to be interchanged in rapid succession with ease and certainty; the *Leica* thread mount requires more time and slightly greater effort, as well as some care in order to avoid damaging the threads during rapid operation.

5. **Focusing: Method.** A certain *Contax* enthusiast cannot "understand how anyone can bear puttering about with a lever in front of the camera, then 'jump' back to the top of the camera in order to press the button." Actually, "jumping back" is avoidable with the *Leica* if one uses a finger of the left hand for manipulating the lever, while a finger of the right hand is held ready on the release button. Many a fast bit of work has been done with the *Leica* despite the distance between lever and button. It is true, how-

ever, that the combination of top lens-rotating wheel and conveniently placed release button contributes to greater speed of operation of the *Contax* II and III, as well as to greater steadiness. In the use of the *Contax*, the forefinger can conveniently be kept on the button while the wheel which turns the lens into focusing position is rotated with the middle finger.

6. **Range Finder and View Finder.** In the *Contax* II and III a single opening is used both for focusing and viewing the picture. This is a great convenience. With the *Leica*, focusing is done through one opening, and then the eye must be shifted to the viewfinder opening in order to compose the picture.

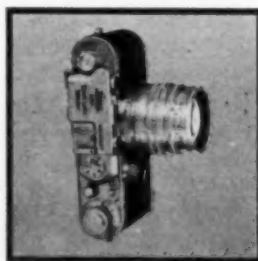
7. **The Built-in Self-Timer.** This device is useful when the photographer wishes to be photographed with a group of other persons or use himself to supply the "human element" in an otherwise barren scene. Some *Contax* users welcome the self-timer; others never use it, even forget its existence. The *Leica* boasts no self-timer.

8. **Built-in Exposure Meter.** The *Contax* III has a built-in photoelectric exposure meter, so constructed that the view it includes is the same as that of the 2-inch camera lens. The sensitivity of the meter is high enough for poor artificial light.

Note, however, that the difference in price between the *Contax* II, without meter, and the *Contax* III, with meter, is \$50, whereas the *Weston* meter, for instance, costs only \$22.50.

9. **Other Structural Features.** The interior of the *Contax* is more readily cleaned than that of the *Leica*—an important point. Another advantage of the *Contax* is that the exposed part of a roll of film can be removed and the rest left in the camera. If *Contax* metal magazines are used, the camera can be opened, and part of the film removed in the light. In the *Leica*, the entire roll must be removed at once.

The *Contax* II is some 10 ounces heavier than the *Leica* G, without lens



LEICA G

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in both instances; the *Contax* III, without lens, weighs a full pound more than the *Leica*. Each *Contax* model is appreciably larger than any model of the *Leica* and so cannot be carried so conveniently in pocket or handbag.

So what are our conclusions? That the two cameras can turn out equally good work; but that the *Contax* may be preferred by both the amateur and the professional for its greater ease and rapidity of manipulation.

Other Range-Finder Cameras Taking 35 mm. Film

THE *Nettax* is another *Zeiss* camera, similar in many respects to the *Contax*, and selling for \$165 equipped with a *Zeiss* f:2.8 *Tessar* lens. It takes 36 pictures on 35 mm. film and has a focal-plane shutter, with speeds from $\frac{1}{5}$ to $\frac{1}{1000}$ second. Its range finder is not combined with the view finder.

The *Zeiss Super Nettel* II (\$115 with f:2.8 lens) differs from the *Nettax* chiefly in having a bellows instead of having the lens screw into the camera.

The price of both the *Nettax* and the *Super Nettel* is high. The *Nettax* costs \$90 more than the *Dollina* II with the same lens (the f:2.8 *Zeiss Tessar*) and \$85 more than the *Dollina* II with the excellent f:2 *Schneider Xenon*. The focal-plane shutter of the *Nettax* and *Super Nettel* is more conveniently operated than the "ring" *Compur* of the *Dollina*, and has the speed of $\frac{1}{1000}$ second which the *Compur* lacks, but the *Compur* has the additional speeds of $\frac{1}{2}$ second and 1 second. Besides, $\frac{1}{500}$ second—the maximum speed on the *Compur*—is usually more than adequate to stop motion.

True, the range finder in the *Nettax* and in the *Super Nettel* is a bit more comfortably operated, but the *Dollina* II finder is no less accurate than that of the other two cameras.

The *Dollina* II was selected for comparison with the two *Zeiss* cameras because it is representative of the other range-finder cameras of its group, and is the best buy in its class, price considered. Its price is \$55 to \$80, according to the lens. Like the other cameras, it takes 36 pictures on 35 mm. film.

The *Super-Baldina* and the *Weltini*, which resemble the *Dollina* most closely, are somewhat higher in price, the *Weltini* costing \$75 to \$99 and the

Super-Baldini \$65 to \$92. The maximum aperture of the lens of either camera is f:2.8, whereas the *Dollina* can be purchased with a *Xenon* f:2, at a list price of \$80 with a discount of \$10 or more in most stores. The parallax correction of the view finder of the *Baldina* is of no practical value, and the yellow-red range finder is not worth the difference in the price. Focusing is more convenient with the *Dollina* II, being done at the top rather than at the front as with the *Super-Baldina*.

The *Weltini*, however, is an excellently designed instrument. It has a combined range-and-view finder, the lens returns automatically to infinity when the camera is closed, and it is equipped with a "push-button" shutter release, close to the range finder. These are thoroughly desirable features. The push-button release on the camera body and the single window for the range finder and view finder are especially convenient; the same is to be said for the range finder, which is of the coincidence type and easier on the eyes—as indeed all such range finders are when compared with the split-field variety. In these respects the *Weltini* is superior to the *Dollina* II. The price of the *Dollina* with f:2 lens is, however, nearly five dollars lower than that of the *Weltini* equipped with the *Tessar* f:2.8. The purchaser must decide whether he prefers the *Dollina* with its faster lens or the *Weltini* with single peep-window plus the coincidence-type finder plus the conveniently placed release (but the slower lens).

The Eastman *Bantam Special* and the *Beira*, each costing \$110, are overpriced and offer no feature to justify the difference

in price as compared with the *Dollina*, *Super-Baldini*, or *Weltini*. The *Bantam Special* has nothing to recommend it over, say, the *Dollina*, yet it

costs \$30 more than the *Dollina* with f:2. The *Beira* boasts a small 6-power prismatic telescope coupled to the lens and used for focusing, despite which, uncertainty in focusing, resulting in

occasional lack of sharpness, is not uncommon.

The *Bantam Special* possesses one feature that may recommend it to some users, namely the use of 8-exposure film. One need not wait until 36 exposures have been made, as one must with the ordinary 35 mm. camera, before developing the film. The range finder, however, is of the split-image type which is considerably less comfortable and rapid in use than the "coincidence type" range finder.

Range-Finder Cameras Taking Film Larger Than 35 mm.

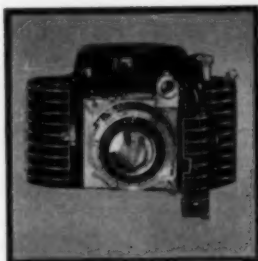
AMONG the miniature cameras with automatic focusing, using film larger than 35 mm., the new *Foth Derby II* promises to be the best buy. The price is \$45 with *Foth* f:3.5 lens and \$55 with *Foth* f:2.5 lens.

The camera has a focal-plane shutter with a speed range of from $\frac{1}{25}$ second to $\frac{1}{500}$ second, inclusive. The size of the negative is smaller than that of any of the other cameras in this group, but there are 16 frames obtainable on the Vest Pocket Roll, No. 127. The range finder is quite satisfactory, being of the coincidence type with magnified central portion of field.

The f:3.5 *Foth* lens is excellently corrected, its sharpness and color correction being superior to those of the *Foth* f:2.5. Refinements are lacking, the construction of the camera having been designed along the lines of simplicity and rigid economy. Its nearest competitor, possessing most of the desirable refinements, is the *Zeiss Super Ikonta A*, priced at \$90, with an f:3.5 *Zeiss Tessar* lens. The difference in price is \$45; that is to say, one can purchase two *Foth Derby II* cameras with f:3.5 for the price of one *Super Ikonta A*. The latter is, doubtless, an excellent camera. The *Compur Rapid* shutter, the 16 larger negatives ($1\frac{5}{8} \times 2\frac{1}{4}$ in.) and other features are excellent. But are these refinements worth \$45 more? For most camera buyers,



FOTH DERBY
(See also page 22)



BANTAM SPECIAL

the answer will be "no."

If we compare the *Weltur*, with a maximum price of \$89.50, and the *Super Ikonta B*, with a maximum price of \$140, we find a similar situation. Both cameras are equipped with f:2.8 *Zeiss Tessar* lens, *Compur* shutter to $\frac{1}{400}$ second, coincidence type range finder, shutter release on body of camera. The *Super Ikonta* exposure counter device for preventing double exposure is lacking in the *Weltur*; but is this feature worth \$50.50 to the consumer? Besides, the *Weltur* has but one viewing window for both range finder and view finder—a very desirable feature, lacking in the *Super Ikontas*. The *Super Ikonta B* is very sturdy, and is endowed with the usual *Zeiss* precision and trimness, but the *Weltur* is a close second—and \$50.50 is a saving not to be passed over lightly.

Twin-Lens Reflex Cameras

THE POPULARITY of the 35 mm. camera with or without range finder may be very great, but it has a formidable rival in the twin-lens reflex.

The great advantage possessed by reflecting cameras, whether large or small, lies in the ease and certainty of composing the view on the ground glass exactly as it will appear on the negative.

It is quite true that focusing by means of a first-rate range finder, such as those found in the *Contax* and the *Leica*, is more precise than focusing on the ground glass of a reflex. But the difference is too small to be detected by the eye in prints of average size.

The *Rolleiflex* is mentioned first

THE PRICES given in this report are list prices where the cameras (e.g., *Zeiss* and *Leitz*) are generally sold at these prices. Those cameras which are customarily sold at discounts are listed, in most instances, at the lower prices. Prices for this latter group are subject to great variation.

Listing of German cameras does not mean that CU recommends their purchase. American-made cameras entirely satisfactory to most photographers are available. (See labor notes, page 22, and editorial, page 32.)

here because it is the most popular and the oldest of the twin-lens miniatures. It has stood the test of time very well. Only a few years ago it was alone in the field, as was the *Leica* in its domain. But the makers of the *Rolleiflex* had planned wisely; a large number of cameras of more or less similar pattern have been placed on the market, but the *Rolleiflex* still appears to be well in the lead. The reasons for this are its fine precision of construction, the ease with which it is operated, and the consistency of the results obtainable with it. It sells for \$115 in the $2\frac{1}{4} \times 2\frac{1}{4}$ in. size with *Zeiss Tessar* f:3.5, or \$120 in the $1\frac{5}{8} \times 1\frac{5}{8}$ in. size with *Zeiss Tessar* f:2.8 lens. It takes 12 pictures on a roll of film. It has a *Compur* shutter with a top speed of $\frac{1}{500}$.



ROLLEIFLEX

Also, it has an especially convenient mechanism for transporting the film. The job is done by giving a conveniently placed transport handle one-quarter turn downward. There is another little twin-lens reflex, the *Pilot* (not to be confused with the single-lens reflex, the *Pilot 6*) possessing a similar mechanism, which, however, requires several turns.

Another excellent feature of the *Rolleiflex* is the "control" or peep window, conveniently placed for viewing from above, in which are plainly shown both the shutter speeds and the lens aperture numbers. Each can be easily and quickly changed by means of a lever on either side of the shutter housing. The camera is very easily steadied for "aiming and shooting."

Performance of the *Rolleiflex* has been of a rather remarkable consistency in its excellence. All things considered, it is the best buy of its type, despite such a drawback as the absence of interchangeable lenses which would permit the use of a telephoto or of a very high-speed lens.

Which brings us to the *Contaflex*—a 35 mm. camera embodying very nearly everything that the miniature camera enthusiast's heart might have longed

for. There are interchangeable lenses (six of them), both high-speed and telephoto; a built-in photoelectric exposure meter; metal focal-plane shutter with speeds ranging from $\frac{1}{2}$ to $\frac{1}{1000}$ second—all the valuable features, in fact, of the *Contax III* excepting the range finder; and an ingenious *Albada* finder-mirror, facilitating self-portraiture. Quite a triumph optically and mechanically. But consider the price: \$435 with the f:1.5 *Sonnar* 2-inch lens; 321 with the f:2.8 *Tessar*, 2-inch lens. That is, roughly three to four times the price of the *Rolleiflex*. It is the final product, the picture, that counts, and the *Rolleiflex* proves that it is not necessary to pay \$300 or more to get good pictures.

The *Rolleicord II*, at \$65 to \$75 with *Zeiss Triotar* lens and taking $2\frac{1}{4} \times 2\frac{1}{4}$ in. pictures, is a less expensive and less elaborate form of the *Rolleiflex*. The transport handle and the peep window are lacking. The price is correspondingly lower, nearly half. And one feature is present in the *Rolleicord* that is not found in its more aristocratic brother—one can focus at eye level by inclining the mirror in the hood. The lenses are *Zeiss Triotars*.

The *Zeiss Ikonflex II*, also taking $2\frac{1}{4} \times 2\frac{1}{4}$ in. pictures, is a comparatively recent arrival amidst the twin-lens reflex family, and is a typical example of *Zeiss* excellence in workmanship. In no way a copy of the details of the *Rolleiflex*, it resembles it closely, though lacking in some of the important convenience of the *Rolleiflex*. Priced at \$95 with *Zeiss Tessar* f:3.5 lens, it is cheaper than the *Rolleiflex* by \$20. It is a dependable instrument.

The *Foth Flex* is the only twin-lens camera accommodating $2\frac{1}{4} \times 3\frac{1}{4}$ roll film that has a focal-plane shutter. This permits exposures from 2 seconds to $\frac{1}{500}$ second, with automatic delayed action of 8 to 10 seconds when required. The prices—\$45 with f:3.5 *Foth* anastigmat and \$60 with f:2.5 *Foth*—are quite reasonable. This camera does not have many of the refinements of the *Rolleiflex* and *Ikonflex*, but it is correspondingly moderate in price.

Single-Lens Reflexes

THE MAKERS of miniature cameras did not lose sight of the fact that some photographers, while preferring

CONSUMERS UNION Reports

a small camera, would welcome a moderately large negative taken with one of a set of interchangeable lenses. To meet such a demand, single-lens reflexes, accommodating negatives from $1\frac{1}{2} \times 2\frac{1}{2}$ in. to $2\frac{1}{4} \times 2\frac{1}{2}$ in. were produced.

The most elaborate and the most costly member of this group of cameras is the *Kurt Bentzin Primarflex*. It is capable of accommodating a 16-inch lens. It is also distinguished by the impartial use of roll film, cut film, or plates without removal of the camera back. A knob is wound, and four things happen simultaneously: the mirror is set for focusing, the shutter is wound, the film is moved one frame, and the exposure dial registers the next exposure. Altogether, it is a remarkable apparatus, although the mechanism could well be more strongly built. The price with the *Zeiss Tessar* f:3.5 is \$165.

A better buy for most amateurs is the *Korelle Reflex*, \$109 with f:2.8 *Zeiss Tessar*, hand-raised mirror, and speeds of 2 seconds to $\frac{1}{500}$ second. The professional may prefer the ready adaptability of the *Primarflex* to plates and cut film, but to the average amateur this feature is negligible in value. The *Korelle* is also obtainable at the price of \$65 with f:3.5 *Victar*, or \$82.50 with f:2.9 *Radionar*. These lenses are not *Zeiss Tessars*, but they will take pictures meeting the demands of many amateurs.

The other patrician of this group is the *Exakta*, of which there are four models, the A, the B and the C, with picture size approximately $1\frac{1}{2} \times 2\frac{1}{4}$ in., and the *Kine Exakta*, using 35 mm. film. The A, which is the cheapest, is moderately priced but possesses none of the tempting facilities of the



EXAKTA

other models. The C is distinguished from the B by a plate back. All are equipped with focal-plane shutter to $\frac{1}{1000}$ second and automatic film wind. All models except the A have an additional slow speed mechanism for exposures of from $\frac{1}{10}$ to 12 seconds.



The price of the Model B *Exakta* ranges from \$90 with the *Ihagee* f:3.5 lens to \$225 with *Zeiss* f:2 *Biotar*. Comparatively, the *Korelle* still remains the better bargain for the amateur content without the *Exakta's* refinements.

The *Noviflex*, about the same price as the *Korelle*, suffers by comparison.

The *National Graflex II*, taking 10 exposures of $2\frac{1}{4} \times 2\frac{1}{2}$ in. on a roll of 120 film, likewise does not stand comparison with the *Korelle*. Compared with *National Graflex* at \$87.50 (list) with f:3.5 *Bausch and Lomb Tessar*, the *Korelle* is the better buy.

The *Pilot 6* is an inexpensive little reflex at the maximum price of \$30 with f:3.5 lens and minimum of \$16.50 with f:6.3 lens. It is well designed and constructed, and is worth its price to those who want a cheap reflex taking 16 pictures on a roll. It is sturdy and convenient.

"Blind" Cameras Taking 35 mm. Film

THE *Argus* at \$12.50 is the cheapest in this group—its one indubitable distinction. The f:4.5 lens is comparatively slow, but the same is true of the *Midget Marvel*, priced at \$21.50. The latter has an automatic exposure counter and is of sturdier construction, to be sure, but the *Argus* will take as good a picture. Besides, the highest speed on the *Argus* is $\frac{1}{200}$ second as compared with $\frac{1}{100}$ second on the *Midget Marvel*. All things considered, the *Argus* is the better buy of the two, though neither

possesses any degree of excellence.

The *Boltavit* looks like a toy, but it is fitted with an f:3.5 lens of good quality, with stops visible from above. Other than the speed of its lens and the fact that its limit is 14 exposures on one roll, there is nothing to recommend it at \$19.50 in preference to the *Argus* at \$7 less.

Of the two cameras in the next price bracket, the *Welti*, \$45 and up, is the better buy in comparison with the *Baldina* at \$42. The *Welti* has a built-in self-timer, an automatic exposure counter, and a "vibrationless" release lever on the body of the camera, none of which is to be found on the *Baldina*.

The *Kodak Retina* at \$57.50 as now sold is a great improvement on the first model, and, though the price is high compared with the cheaper model of the *Welti*, the *Retina* is characterized by the best design and construction of the cameras in this group



RETINA

so far mentioned. Its f:3.5 lens is slower than the f:2.9 of the *Welti*, but the slower the lens of a non-focusing camera, the sharper the picture is apt to be. If the price of the *Retina* were lowered, the camera would have every qualification of a record breaker in its

class. Everything considered, it is still an excellent buy.

And now the *Robot* at \$179. The outstanding feature of the *Robot* is its shutter wind: one winding is sufficient for 24 frames, moved automatically by pressing the shutter release in rapid succession. Thus, action shots in sequence of athletic events, dancers, etc., can be very readily made with this camera. There is also a built-in green filter, with automatic compensation for exposure when the filter is used. The optical view finder can be turned for candid shots at right angles to the object or person photographed. But what a difference in price between the *Robot* (\$179) and other blind cameras. Unless one wishes to specialize in photographs made in rapid succession, the *Robot* is no whit more valuable to the photographer than the *Welti* or *Retina*. It is small and durably built; the lenses are interchangeable; there is a telephoto—but this reduces the depth of field, making accurate focusing difficult.

"Blind" Cameras Taking Film Larger Than 35 mm.

IN THIS GROUP the *Zeiss Ikontas* are excellent instruments, especially the *Baby Ikonta* at \$54 and the *Ikonta A* at \$30 to \$58. Comparable with these is the *Eastman Duo-6-20* at \$57.50, though the *Zeiss Tessar* f:3.5 is superior to the *Kodak anastigmat* of the same aperture, and \$57.50 is a high price for the *Duo-Six*. The *Baldax* at \$42 to \$49 and the *Baldi* at \$31.50 to

\$42.50 are equipped in most models with f:2.9 lenses and are quite satisfactorily designed and constructed. The Eastman *Vollenda*, at \$36 with a 4.5 lens, is in many respects similar to the *Baldi* and *Baldax*. Of these three cameras the *Baldax* has the largest negative size, $1\frac{3}{4} \times 2\frac{1}{4}$ in.

The best buy, however, in this type of camera is the *Dolly*. There are several models: the cheapest (\$15) is fitted with an f:4.5 *Certar* lens in a simple shutter, the *Vario*, with speeds of $\frac{1}{25}$, $\frac{1}{100}$ and $\frac{1}{150}$; the most expensive (\$70) is the model equipped with the excellently color-corrected *Xenon* f:2 in *Compur Rapid*. Some of the models allow negatives of two sizes, while others can accommodate a ground glass, plates and cut film. In all cases, the construction is sturdy and the design such as to make the camera quite convenient to operate. The cheap \$15 *Dolly* is particularly recommended because of its price

and the quite excellent results it gets.

The *Foth Derby* I at \$23.75 to \$33.50 is the only camera in this group equipped with a focal-plane shutter. The *Foth* f:3.5 lens, as has already been noted, is of excellent correction.

Miniature Cameras

Advantages

1. Light in weight.
2. Small in size.
3. Excellent in poor light.
4. Rapid in operation.
5. Preferable for "candid" work.
6. Great depth of focus because of short focal length of lenses.

Disadvantages

1. Good ones are expensive.
2. Lack useful "movements."
3. Not good for architectural photos.
4. Not good for taking large groups.
5. Negative processing needs great care.
6. Involve added expense of enlarger or of having enlargements made.
7. 36 pictures on a roll (as in most 35 mm.) is often too many.

CONSUMERS UNION Reports

The price is reasonable. Excellent results are obtainable with the *Derby* provided reasonable care is exercised in using the camera, the construction of which, especially the shutter mechanism, will not stand the strain of much careless handling.

The *Eho* (\$3.50 list) is a small box camera equipped with double lens. It does not compare favorably with the better-grade American-made box cameras.

The *Brilliant* (\$7.50 to \$27.50) is here included in its proper place, as a blind camera, equipped with a hooded, non-focusing finder of a size larger and brighter than is usual. It is actually a box camera, at a high price for box cameras.

BY WAY of conclusion to this survey of the miniature field, we can do no better than to summarize the advantages and disadvantages of the miniature (see column 2).

How Does the German Worker Live?

BECAUSE of the great number of cameras of German manufacture, CU feels that a note on German labor conditions is in order. It has to be a rather general note; it was not possible to write to German trade-union officials for facts on working conditions in camera factories. For there are, of course, no trade unions in Germany. Nor could we direct letters to former trade-union officers who are now in concentration camps, if they are yet alive.

But information relative to German labor has been enriched in the past month by a most surprising and revealing report (see also the editorial on German labor on page 32). The report came from Frank Knox, publisher of the *Chicago Daily News*, who will be remembered as the vice-presidential candidate on the Landon ticket last fall. It appeared in this country under the syndicating auspices of the North American Newspaper Alliance. For the information that follows, CU has Mr. Knox as its authority. Assuredly he cannot be accused—as so many are who have arrived at the same conclusions—of a radical bias.

THE German workman, Mr. Knox reminds us, is prevented by law

from getting a wage increase. He cannot even leave one job to take another at higher pay, albeit the government permits the employer to reduce wages under certain conditions.

Linotype operators in the composing room of Mr. Knox's Chicago newspaper earn \$56 a week. If the men setting type for Herr Hitler's newspaper are paid the prevailing German scale, their weekly wage is \$10.45 and they must work $6\frac{1}{2}$ hours longer than the Americans to get one-fifth as much.

But the German skilled mechanic does not bring home the full \$10.45. There are certain deductions and compulsory contributions, such as: taxes and insurance, \$1.38; dues to the Labor Front, 15 cents; donation to the winter relief fund, 6 cents; miscellaneous (radio in shop, air defense fund, party collections, etc.), 31 cents. These items total \$1.90, leaving a net weekly wage of \$8.55 for 44 hours of work.

A typical family of five, Mr. Knox figures, could budget \$57.71 for a year's rent, \$244.06 for food, \$56.83 for clothing and so on, leaving the head of the family a margin of \$4.04 "to do with as he will in the course of a year." There is nothing, of course, to prevent an ambitious workman from

using his \$4.04 as a down payment on a car, unless his wife should be so extravagant as to exceed her weekly quota of 7 eggs and $8\frac{1}{2}$ quarts of milk in feeding her three youngsters.

"It must not be overlooked," Mr. Knox warns, "that the case I have cited is that of a highly skilled worker. He received \$45 monthly. According to the Reich Statistical Office, a government source, the average monthly earnings of German laboring men in 1936 were only \$31.09, approximately one-third less than the linotype operator cited. Accordingly the sample budget must be reduced by one-third if the average is sought."

The rights of the German worker, Mr. Knox points out, are "substantially non-existent." The Labor Front, in which membership is practically compulsory, is "completely controlled by politicians of the Nazi regime." If the German worker objects because his wages have gone down while wages all over the world have risen, he must keep his objections to himself.

Mr. Knox concludes: "The status of the German worker, once a free, highly intelligent, well paid and self-respecting member of society, is that of a miserably paid wage serf of the government."

A Report on Thirteen Models of

ICE BOXES

And Some Tips on How to Buy Them

TO SAVE a fast dwindling market in ice and ice boxes the industry has concocted a whole set of new claims designed to establish the superiority of ice over mechanical means of refrigeration. Claims have been made, by the Coolerator Co., for example, that only ice (1) maintains properly "humidified" air, (2) will not dehydrate or dry out the food, (3) gives necessary low temperatures without disturbing the "natural composition" of the air, (4) eliminates the need for refrigerating gases that taint the food, (5) eliminates gases given off by decayed food, by means of the water from the melting ice carried away through the drainpipe, (6) stops the tainting of one food by another. Such claims are of course absurd—so absurd in fact that the Federal Trade Commission has issued a complaint against the Coolerator Co.

The general construction of the better ice boxes is now about equal to that of good mechanical refrigerators. The essential differences are: (1) the ability of mechanical refrigerators to maintain consistently lower and more uniform temperatures; (2) the somewhat greater dehydrating effect of mechanical refrigerators (a difference, however, not considered significant from the standpoint of food preservation); (3) cost of operation, which depends to a large extent on local prices of ice and electric current; (4) first cost—the best ice boxes of about 5 cu. ft. capacity may be purchased for \$60 to \$70, while mechanical refrigerators of equal size are seldom priced under \$100.

ALL of the better-made ice boxes are now top icers (ice compartment across top of the box). The old-style boxes, mostly side icers, were, because of poor construction, too inefficient to compete with electric refrigerators. Most of the latest-designed top icers have grids on which the ice rests causing it to melt in deep corrugations, thus increasing the surface exposed to the air. As a result of this construction

and improvement in the insulation, somewhat lower temperatures can now be maintained in ice boxes. Newer boxes do not maintain as low temperatures in the coldest portions as the older boxes, but temperatures are more uniform and lower on the average.

The insulation of the box should be either of corkboard or Dry Zero, which absorb less moisture and are more durable than most insulating materials. Two inches is the minimum thickness for any insulation if low temperatures are to be maintained without excessive ice consumption. The tightness of construction of the top, corners, and bottom should be carefully inspected, as a great deal of heat can leak into the box through corners not sealed properly. The door must fit closely and should have a rubber gasket around the inside edge which should be held tightly against the box. It is preferable to have the interior of porcelain; the bottom at least should be of this material. The inside corners should be rounded to facilitate cleaning.

Examine the hardware carefully. Hinges are often stamped out of thin metal, and if so will wear very rapidly. The door catch should be of rugged construction and so designed as to hold the door tightly against the door frame. A separate door to the ice compartment is preferable, as it will then not be necessary to allow the cold air surrounding the ice to flow out when the door to the food compartment is open.

The proposed American Standards Association specifications call for an inside temperature of 45° in the milk compartment with an average of 50° in the whole food compartment when the outside temperature is 85°. This is certainly a minimum requirement, as surrounding air temperature will at times run up to 100°F or more. A guarantee that such inside temperatures can be maintained should be secured by the purchaser. The drainpipe and traps should be of copper or nickel or chrome plated.

THE FOOLISH CONSUMER



Consider the terrible plight
Of the foolish consumer of
Wight,
Who treated his ills
With well-advertised pills
And lost both his hearing and
sight.

How very depressing and sad
That this sorry young man
never had
The Reports of CU
(And the Buying Guide, too)
To tell him the good from the
bad.

Moral:

Love thy neighbor as thyself.

GIFT
MEMBERSHIP BLANK

(The blank on the reverse of this
is for your own use, if you are not
yourself a member.)

To: Consumers Union of U. S., Inc. 55 Vandam Street, New York, N. Y.

I wish to make a gift of a membership in Consumers Union. I enclose:
☐ \$3 for 1 year's membership, \$2.50 of which is for a year's subscription
to the complete edition of Consumers Union Reports and the Annual
Buying Guide.

The membership is to be entered for:

Name.....
Address.....
City and State.....
My name is.....
My address.....

TO OBTAIN the best results from an ice refrigerator, food should not be crammed tightly in the food compartment, as this will cut off circulation of the air. The drainpipe and interior of the box should be cleaned frequently with bicarbonate of soda and water or other mildly alkaline solution. Milk, butter, uncooked meats, desserts, and salads should be kept in the coldest portion of the box. In the newer top icers this should be on the top shelf just under the ice. Do not allow the ice to get too low, as much loss of food will result from allowing the box to warm up before re-loading with ice. The newer boxes with fins or grids on which the ice rests will maintain low inside temperatures even when the block of ice has melted down to 25 or 30 pounds.

The ice boxes listed below were rated on the basis of specification data, general examination, and some available test data. The ratings have in most instances been confirmed by two

or more engineers familiar with the operation and general construction of the ice boxes now on the market.

All boxes, except where noted, are top icers. List prices are given, but substantial discounts may often be obtained, particularly if an old box is traded in. The measurement in cu. ft. is that of the food compartment and the figure in lb. represents the ice capacity, as given by the manufacturer.

Acceptable

(In estimated order of quality)

Coolerator Model L-9 (The Coolerator Co., Duluth, Minn.). \$89.50. 5.7 cu. ft. 160 lb. 4-in. Dry Zero insulation. Du Lux finish. Bottom interior of porcelain. Copper drain. Glass trap. Tests on older models of similar construction showed satisfactory inside temperatures.

Coolerator Model L-8. \$79.50. 5.03 cu. ft. 160 lb. As well made as Model L-9, but ice consumption somewhat higher.

Olympic Model A-2 (Ward Refrigerator & Mfg. Co., Los Angeles). \$110. 6 cu. ft. 125 lb. Well constructed. 4-in. "firtex" insulation in body, 3-in. in door. Du Lux finish inside and out. Bottom interior of porcelain. Copper drainpipes and traps. Welded seams.

Olympic Models R-10 (5½ cu. ft.) and **R-14** (4½ cu. ft.). 125 lb. 3-in. "firtex" insulation; ice consumption therefore somewhat higher than that of Model A-2 listed above. Well constructed.

Olympic Models R-2 (4 1/3 cu. ft.), **R-4** (5½ cu. ft.), and **R-7** (6¼ cu. ft.). 75, 100, and 125 lb., respectively. Side icers; otherwise similar to R-10 and R-14.

Duo-Draft Model B72 (McKee Refrigerator Co., Cobleskill, N. Y.). \$84.50. 6.15 cu. ft. 100 lb. 3½-in. balsam wool insulation.

Conditionaire Model L-6 (Tennessee Furniture Corp., Chattanooga, Tenn.). \$95. 6.12 cu. ft. 100 lb. 3-in. insulation of combination rock wool and spun glass. Du Lux finish. Bottom interior of porcelain. Construction only fairly good, with ice consumption probably higher than that of boxes listed above. Inside temperatures such as to give only fair food protection.

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Klondike Model 27 (Maine Manufacturing Co., Nashua, N. H.). \$62. 4.9 cu. ft. 100 lb. 2½-in. balsam wool insulation. Showed fairly high ice consumption, but inside temperatures were satisfactory.

Vitalaire Model B4 (Ice Cooling Appliance Corp., Morrison, Ill.). \$44.50. 4 cu. ft. 50 lb. 2½-in. insulation in the walls, 3-in. in the door. Ice consumption fairly high, but inside temperatures satisfactory.

Everpure Model EM-30 (Sanitary Refrigerator Co., Fond du Lac, Wis.). \$45.30. 3 cu. ft. 75 lb. 2½-in. cork and spun glass insulation. General construction light, performance fair.

Cavalier No. 2346 (Tennessee Furniture Corp.). \$35. 1½-in. glass wool insulation. Construction only fair. Ice consumption high. Inside temperatures satisfactory in one sample but too high in a second sample. Product evidently not uniform and therefore "Acceptable" only because of low price.

Not Acceptable

Sanitary Model 87 (Sanitary Refrigerator Co.). \$28.70. 4.2 cu. ft. 85 lb. Side icer. Insulation (1½-in.) inadequate; inside temperatures above safe limit.

King—all models (King Refrigerator Co., Brooklyn, N. Y.). Only a half-inch of insulation. Construction of one sample among the worst of those examined. The inside temperatures much too high for safe protection of food. Prices are low.

All refrigerators bearing no trade or brand name or manufacturer's name.

Ice Chests

MANY persons may wish to consider purchasing ice chests for small apartments or summer homes. One of the oldest types of ice boxes, they are also, when walls are well insulated, one of the most efficient. The ice should be supported on a grid or block above the floor. Circulation of air within such boxes is usually poor. And if slime and sediment are allowed to accumulate, the resulting sour and musty odors will necessitate frequent cleaning. Look for a box guaranteed by the manufacturer to have at least 2 inches of corkboard insulation and with an interior constructed of heavy galvanized metal.

PERSONAL MEMBERSHIP BLANK

(The blank on the reverse of this may be used for a gift membership, if you are now a member.)

To: Consumers Union of U. S., Inc.
55 Vandam Street, New York, N. Y.

I hereby apply for membership in Consumers Union. I enclose:

☐ \$3 for 1 year's membership, \$2.50 of which is for a year's subscription to the complete edition of Consumers Union Reports and the Annual Buying Guide.

☐ \$5 for 1 year's membership and subscription plus a contribution toward a permanent consumers laboratory.

I agree to keep confidential all material which is so designated.

Name.....

Address.....

City and State.....



Tennis Rackets, Balls & Strings

BEGINNERS are usually advised to buy the cheapest tennis equipment available. For those who intend to continue with the game that is usually bad advice; tennis can be played better and learned more rapidly with a good racket. And certainly the game is more enjoyable with a well balanced frame and resilient strings.

Any racket costing more than \$5 complete should be bought without strings, and then be freshly strung. If the price is less than \$5, the factory-strung frame is preferable. Manufacturers string rackets comparatively loosely to avoid the risk of breakage of the strings while the rackets are on the dealer's shelf. Furthermore, strings deteriorate in the frame: silk ones stretch and go dead, gut strings lose resiliency and tend to break easily. The buyer cannot tell how long a racket has been in stock. Still more important, it is the practice of some frame manufacturers to use low grade strings that cannot be sold to regular restrungers.

Silk is more durable than gut, and less expensive. But silk is less resilient and becomes even deader after stringing, since it does not hold tension. It is recommended only for players who must obtain strings at low cost and as seldom as possible.

Light-gauge strings are faster and tightly strung string is more resilient but both are less durable than heavy, relatively loose strings. Generally speaking, the best plan is to use 15-gauge gut, tightly strung. Whether a string is solid color or spiral makes no difference.

In many communities there are young men who string rackets, sometimes doing the job better than the sporting goods stores. The only way to judge the proficiency of such stringers is to discuss the matter with players who have had experience with their work. Anyone who has the time

and the knack of using his hands can economically string his own racket, although the purchase of the \$4 to \$6 worth of equipment required for stringing is hardly justified unless the player needs frequent restringings or wishes to do work for his friends.

The job takes an experienced stringer about an hour. Silk or gut strings and stringing equipment can be purchased from the Wills Gut Manufacturing Company or the Thompson Manufacturing Company, both of Chicago. The Thompson strings are generally better. In either case, the cost of strings will be about half the retail strung price. A beginner is advised to buy the cheapest silk strings for his first job and put them in an old frame.

COMPARATIVELY light frames are recommended for easiest play, although the weight, as well as the balance and handle size, must depend considerably upon the individual. A racket weighing 13 to 14 ounces strung, balanced light in the head, with a handle $4\frac{3}{4}$ to $4\frac{7}{8}$ inches in circumference, is recommended for men. For a woman, the weight should be $12\frac{3}{4}$ to $13\frac{1}{2}$ ounces, balance as above, with a handle of $4\frac{1}{2}$ to $4\frac{3}{4}$ inches. (Strings weigh about $\frac{3}{4}$ to 1 ounce.) Leather grips are recommended.

The value of laminated wood frames has been much overrated. There may be some advantage if the laminated wood is good to begin with, because the chance of its splitting is minimized. But when several pieces of poor quality wood are laminated, the frame will not be so strong as one made from a single piece of good wood; lamination itself does not insure a strong and durable frame. Five plies should be considered the maximum for laminated frames, since a greater number means that the separate pieces

will be too thin. Some manufacturers have carried lamination to an extreme, using as many as nine plies.

On almost any court the player will hear myths about the additional "speed" and "whip" from specially constructed frames with open throats and slotted handles. Advertising claims have helped to mislead the uninitiated. These features add nothing which improves the racket, and, in fact, they tend to weaken the frame.

In many of the racket listings below only the manufacturer's name is given, since model names mean nothing on most rackets. Most manufacturers distribute the same frame under many different names. In such cases, retail prices only are mentioned.

Balls

AERICAN-MADE balls are of poor quality, lacking durability. There is little difference in the rubber. Manufacturers inflate their balls to the maximum, making them too lively and short-lived.

The wool cover is the most important part of a tennis ball, because the nap provides air resistance and holds the ball true in flight. Balls with thin and worn covers feel light and tend to "float." Of the American-made balls the most durable cover found in this investigation was on *Dunlop* balls, although it does not compare with the best English prod-



ucts. Least durable were *Pennsylvania* balls.

Covers and Presses

RACKETS do not need covers and presses. A well strung racket will not warp if kept properly, and newspaper is more effective than other covers in keeping off moisture. A racket should not be put away resting on an end, but laid flat.

Rackets

Best Buys

Strokemaster (Hollywood Racket Mfg. Co., Hollywood, Calif.). Not widely distributed outside the West Coast, but a card to the manufacturer will bring name of nearest dealer. Usually sells for \$6, frame only. Laminated frame and leather grip. Well balanced, durable, and resilient. Guaranteed for two months against breakage in play.

Cortland (Cortland Line Co., Cortland, N.Y.). Can be purchased in many department and sporting goods stores. \$5 and below.

Also Acceptable

Magnan \$3 to \$5 Frames (N.J. Magnan Corp., North Attleboro, Mass.). Widely distributed under its own and a number of brand names; many R.H. Macy (NYC) private-brand frames are of this make.

Bancroft \$4 to \$5 Frames (Bancroft Racket Co., Pawtucket, R.I.). Not widely distributed.

Strokemaster Professional Model. \$7.00, frame only. More durable than the *Strokemaster* listed above, but not sufficiently better to justify the difference in price.

Strokemaster De Luxe. \$9.00, frame only. A very good frame, but not

Tennis Shoes

CLOTHING is a matter of taste and comfort for the individual. Shoes are the most important item. Most practical are oxfords costing \$1.50 or less and having soft rubber soles, cushion heels, and inner soles. Comparative tests have not been made, but U. S. Rubber Company's *Keds* (\$1.50) are believed to be a good buy.

worth the price differential over the other rackets of the same manufacture.

Wilson (Wilson Sporting Goods Co., Chicago). \$4 to \$6. Excessively priced.

Harry C. Lee (Harry C. Lee & Co., NYC). \$4 to \$6. Excessively priced.

Fred Perry (Slazenger's English racket; imported by General Sportcraft Co., 232 Madison Ave., NYC). \$12 to \$16, frames only. Excellent quality, but high-priced.

Not Acceptable

Spalding (A.G. Spalding & Bros., NYC). In the large majority of frames examined, the wood was over-seasoned and brittle. Many stringers complain that the wood in these frames splits too easily. Balance and resiliency not good. Prices, generally, are too high.

Wright & Ditson (Wright & Ditson, NYC). Comments under *Spalding* apply.

Magnan Frames over \$5. Wood soft with some tendency to warp.

Bancroft Frames over \$5. Comments under *Magnan* above apply.

Kent (Kent, Inc., Pawtucket, R.I.). Frames of this manufacturer have not stood up under play.

Strings

(Prices include stringing)

Best Buys

GUT
"No. 5" (Johnson Surgical Suture Co., Chicago). About \$5. 15-gauge recommended. Comes nearest of any string to combining resiliency and durability at a medium price. Made from only the best sheepgut casings. The best quality at any price.

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SILK

Sunshine (Gardner-Sara Co., Oakland, Calif.). Should not cost over \$3.50. Has more resiliency than other silks.

Also Acceptable

GUT

The following are considered to be good strings but not worth the difference in price over the Johnson "No. 5."
Davis Cup (Armour & Co., Chicago).
Imperial (Victor Gut Mfg. Co., Chicago).

American \$7 String (American Gut Co., Chicago).

Super Special (Armour & Co.). \$7.

SILK

Any standard silk costing not over \$3.50.

Not Acceptable

GUT

Tilden Championship (Armour).

Victor cheap strings (Victor Gut Mfg. Co.). Lack durability.

E. P. Juneman strings. Too soft, and wear out quickly.

Balls

Best Buys

Dunlop 1937 (Dunlop Tire & Rubber Co., Buffalo, N.Y.). Varies in price from 90c to \$1.25 for three. Best of the American-made balls, but not as good as they should be at these prices.

Also Acceptable

Slazenger Top Grade (made in England; imported by General Sportcraft Co.). Three for \$1.49 at R. H. Macy, NYC. High-priced.

Balls of the two following brands appeared to be identical:

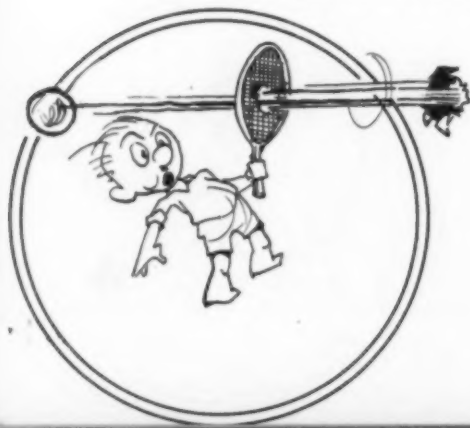
Spalding 1937. Price varies from 90c to \$1.25 for three.

Wright & Ditson 1937. Price varies from 90c to \$1.25 for three.

Not Acceptable

Pennsylvania 1937 (Pennsylvania Rubber Co., Jeannette, Pa.).

Wilson 1937 (Pennsylvania).



GOLF BALLS

A Report on 16 Widely Distributed Brands,
Rated for Three Groups of Players: the
Experts, the Dubs, and the Great Majority.

EVEN golf balls, it seems, must have their sales appeal. The very latest thing is the "ugly duckling" markings which now distinguish the *Tournament*, *Top-Flite*, and *Kro-Flite* balls of A. G. Spalding & Bros. The new markings, so it's claimed, enable the ball to "get up" more quickly "without loss of distance" and give an illusion of increased size to make the ball easier to hit.

They will no doubt prove to be a great advertising success. But in actual tests such balls did not "get up" more quickly "without loss of distance" than samples of the same brands undistinguished by these markings. As for the illusion of increased size, that would seem a questionable advantage, especially in putting. The average golfer would be more interested in cups that give an illusion of increased size.

The most desirable qualities of golf balls are determined to some extent by the proficiency of the golf player. Expert players naturally want a ball that will give maximum distance with no eccentricities in flight or roll; most beginners are more interested in durability and price. The majority of players are somewhere between these two extremes and are or should be about equally interested in durability, price, and distance. The balls herein reported on have, therefore, been rated for these three groups: the experts, the dubs, and the "great majority." Most golf players, we realize, will be inclined to rate themselves at least one class higher than they would be rated by impartial referees; and for that reason CU's classification is anything but rigid.

X-RAY pictures were made of samples of the golf balls tested to show the size, shape, and position of the center. The only ball found to be appreciably off-center was Ward's *Denny Shute Medalist*. And this was

the only ball to wobble perceptibly in flight. Our consultant stated in his report that "when driven it appeared to be about six inches in diameter, and to have a tail a foot or more in length."

Tests for the relative distances to be expected from the balls were made in two ways. First, each ball was mechanically released from a height of 70 inches and the height of the rebound measured (see table I, column A). The average of these results was multiplied by a constant, 5.15, to give column B. Second, a simple driving machine was constructed and the results were recorded and averaged and multiplied by a constant, 4.35, to give column C. Multiplying by the constants in each case makes it possible to compare the two measurements for distance.

Durability or resistance to cutting was measured by means of a guillotine or knife edge. The height from which the knife was dropped was increased until the knife would cut through the cover. Table II gives the result of this test.

GOLF BALLS UNDER THE X-RAY

TOP ROW, L. TO R.
Tournament, *Kroflite*,
Fairway, *Olympic*
SECOND ROW
Sarazen, *Parmaker*,
X-pert, *Topflite*
THIRD ROW
Royal Arrow, *Hol-hi*,
Hilander, *Vulcord*
FOURTH ROW
Tommy Armour, *Medal-*
ist, *Ray Mangrum*,
Tomboy

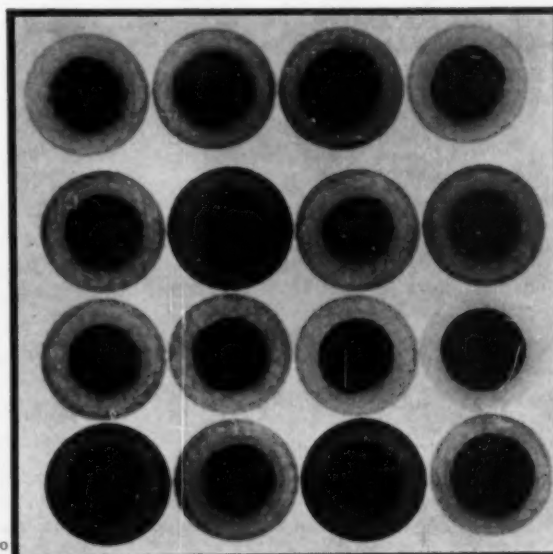
CONSULTANT'S PHOTO

Table I (See Col. 2)

	A	B	C
Tournament	48 $\frac{1}{2}$	250	250
Parmaker	47 $\frac{7}{8}$	247	248
Top-Flite	47 $\frac{3}{4}$	246	247
Ray Mangrum	47 $\frac{1}{2}$	245	244
Kro-Flite	47 $\frac{3}{8}$	244	241
X-pert	47 $\frac{3}{8}$	244	238
Royal Arrow	46 $\frac{7}{8}$	242	237
Medalist	46 $\frac{1}{2}$	240	236
Fairway	46 $\frac{1}{4}$	238	236
Hilander	44 $\frac{7}{8}$	231	237
Hol-hi	44 $\frac{3}{4}$	231	236
Sarazen	44 $\frac{3}{4}$	231	235
Tomboy	44 $\frac{3}{4}$	231	225
Olympic	44 $\frac{1}{2}$	229	226
Tommy Armour	44 $\frac{3}{8}$	229	234
Vulcord	42 $\frac{3}{4}$	220	218

Table II (See Col. 2)

	Height-inches
Kro-Flite	12 $\frac{1}{4}$
Top-Flite	11
Olympic	11
Fairway	10
Tommy Armour	10
Sarazen	9 $\frac{3}{4}$
Hol-hi	9 $\frac{1}{2}$
Hilander	9 $\frac{1}{4}$
Vulcord	9
Royal Arrow	8 $\frac{1}{2}$
Parmaker	8 $\frac{1}{2}$
Medalist	8 $\frac{1}{2}$
Tomboy	8 $\frac{1}{4}$
X-pert	8
Ray Mangrum	8
Tournament	6 $\frac{1}{2}$



Comparing the results of these tests with advertising claims leads to some interesting differences. Consider the *Hagen Vulcord*:

Advertising Claims (<i>June Esquire</i>)	Actual Test Results
"Just the toughest Eight others were—that's all!" tougher.	
"A superb yardage If you can drive a getter!"	Tournament 250 yards you will lose up to 30 with a <i>Vulcord</i> .
"It's an eye-True, you will be opener."	surprised at its poor showing.

Most of the better-grade balls have liquid centers—a white oily base compound in most instances. Hard rubber is used in the cheaper balls. The *Hagen Vulcord* uses honey—our tests indicated no advantage for this widely advertised feature.

Variation among balls of the same brand was slight except in one instance; three *Hol-hi* balls showed a variation of $1\frac{3}{4}$ inches in the bounce test. This was possibly due to the fact that two of the balls tested may have come from old stock.

Low Handicap

FOR expert or low-handicap players—rated chiefly on the basis of uniformity and distance.

Best Buys

Tournament (A. G. Spalding & Bros., NYC). 75c.
Parmaker (Crawford, McGregor & Canby Co., Dayton, Ohio). 75c.
Top-Flite (A. G. Spalding & Bros.). 75c.

Also Acceptable

Ray Mangrum (Crawford, McGregor & Canby Co.). 75c.
Kro-Flite (A. G. Spalding). 75c.
Sears' X-pert (Sears Roebuck retail stores). 59c.
Royal Arrow (United States Rubber Products, NYC). 75c.
Fairway (United States Rubber Products). 50c.

Not Acceptable

Ward's Denny Shute Medalist (Montgomery Ward retail). 49c.

Hilander (Wilson Sporting Goods Co., Chicago). 50c.
Hol-hi (Wilson Sporting Goods Co.). 75c.

Sarazen (Wilson Sporting Goods Co.). 75c.
Hagen Tomboy (L. A. Young Golf Co., Detroit). 50c.
Olympic (A. G. Spalding & Bros.). 35c or 3 for \$1.
Tommy Armour (Worthington Ball Co., Elyria, Ohio). 50c.
Hagen Vulcord (L. A. Young Golf Co.). 75c.

Medium Handicap

FOR golfers scoring between 85 and 110—rated on basis of durability, price, and distance.

Best Buys

Kro-Flite.
Top-Flite.
Fairway.

Also Acceptable

Olympic.
Tommy Armour.
Hilander.
Sears' X-pert.
Parmaker.
Ray Mangrum.
Royal Arrow.
Sarazen.
Hol-hi.

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Tournament.
Ward's Denny Shute Medalist.

Not Acceptable

Hagen Tomboy.
Hagen Vulcord.

High Handicap

FOR beginners and golfers below average in skill—rated on basis of durability and price.

Best Buys

Olympic.
Fairway.
Tommy Armour.

Also Acceptable

Kro-Flite.
Top-Flite.
Hilander.
Sarazen.
Hol-hi.
Hagen Tomboy.
Hagen Vulcord.
Ward's Denny Shute Medalist.

Not Acceptable

Royal Arrow.
Parmaker.
Sears' X-pert.
Ray Mangrum.
Tournament.

Fact or Fable?

(Answers to questions on page 7)

- 1. The correct answer is *d*. Adding soda or using an abundance of water will preserve the color, but the use of soda leads to the loss of valuable vitamins, and an abundance of water causes the loss of both vitamins and minerals. Leaving the pan uncovered allows the acids which destroy the green coloring matter to escape, and has no effect on the vegetables. See *May Reports* (1937).
- 2. False. Rapid freezing of ice cubes (except, of course, at special regulator settings) is cause for suspicion. It means that the refrigerator is poorly insulated, and that unusually low temperatures are being maintained in the freezing coils to compensate for this lack. See *July Reports* (1936).
- 3. True. What the high bacteria counts do mean is that methods of handling (such as refrigeration) are inadequate to check bacterial growth. The risk is that conditions which lead to the presence of harmless bacteria in a food or beverage also favor the multiplication of harmful germs that may be present; so that to be on the safe side the product should not be consumed. Furthermore, such lack of care is often accompanied by actual contamination by careless vendors. CU's investigations at Coney Island last summer showed 3,000,000 bacteria per cubic centimeter in samples of malted milk, nearly 400 times as much as in a sample of the sea water taken twenty feet from shore. The malted milk was

not necessarily dangerous; but it may well have been and the vendors of it were assuredly taking no great pains to see that it wasn't. See *August Reports* (1936).

• 4. You would be justified in saying *c*. In the two-year period from January 1935 to January 1937, wages in the shoe industry increased one-quarter of one percent while prices went up three percent, as reported in the American Federation of Labor's Monthly Survey of Business. Other industries reported on in this same survey showed price rises as high as sixteen percent, but none showed wage increases of more than two percent. See *June Reports* (1937).

• 5. True. Even with the most careful home laundering (and laundering is the chief source of wear), wear per dollar goes up by no means so fast as price. In the usual commercial laundry twenty or so launderings are about maximum. A higher price means primarily better appearance. See *October Reports* (1936).

• 6. False. The wringer is a great deal more dangerous, but CU's tests of washing machines showed the two types to be about equally effective. See *May Reports* (1937).

• 7. False. Lanolin is as effective in one form as it is in the other. The difference, from the user's point of view, is that the hydrous type (known also as toilet lanolin) costs somewhat more, is softer in consistency and easier to apply, and has a less objectionable smell. See *Jan.-Feb. Reports* (1937).

• 8. The correct answer is *b*. Which means, on paper at least, that rayon will be represented no more by these stores as "silk linen," "cotton linen," "spun rayon linen," etc. See *June Reports* (1937).

• 9. True. You can sometimes find good buys from a mechanical standpoint among the larger cars, but almost without exception they will be more expensive to operate. See *July Reports* (1936).

• 10. False. Commercial polish removers are among the most overpriced of cosmetic preparations, selling frequently at a price about 100 times the cost of their ingredients. They consist mainly of ethyl acetate or acetone, available at drug stores for much less than any commercial preparation and just as satisfactory. See *Buying Guide*, page 63.

What Are the Symptoms of CONSTIPATION ?

Third of a Series of Articles
for CU by Harold Aaron, M.D.

IN ANCIENT times, the brain, the heart, and the lungs were considered the tripod of life. When one of the three failed, the whole structure toppled. Our modern advertising alchemists have added to the tripod. The colon now shares with the brain an exalted place in human pathology.

The evolution of the colon from a simple organ of excretion to the source of the most malevolent ills of mankind began early in the nineteenth century when medical speculation was at fever pitch. Although very little investigation had been carried out, the fact that the colon held waste matter suggested a role as a seat of disease. And on this basis the speculation continued.

It reached its climax around 1910 in the writings of Dr. Arbuthnot Lane, who, as we saw in the first article of this series, ascribed to constipation such miscellaneous ailments as cancer, tuberculosis, asthma, neuritis, melancholia, goitre, rheumatism, high blood pressure, flat feet, etc. Today no responsible physician will argue that constipation can cause any of these diseases; nor is there any basis for such statements as the following which appeared in a recently published

popular health book: "... should the condition [constipation] go uncared for, it can lead to various disorders such as liver complaints, kidney troubles and nervous diseases" ("Take Care of Yourself," Jerome W. Ephraim). Constipation is now recognized simply as a symptom of a disordered function of the bowel, having no relation to any major disabilities.

BUT if constipation does not cause heart disease, kidney disease, or cancer, there are many people, including some physicians, who insist that it is responsible for numerous minor disabilities. They insist that it is responsible, for example, for auto-intoxication—a sly demon breeding its furies in the damp darkness of the colon. The discovery that the colon contained millions of germs furnished the basis for this theory. Some people complaining of constipation do suffer from headache, biliousness, bad breath, "gas," melancholia, and irritability, and what more natural than to assume that these germs and their poisons become absorbed from the constipated colon into the blood stream?

Many sound colons were cut out as a sacrifice to this theory. When the treatment became too drastic and irrational for most physicians, and the theory of auto-intoxication was being critically questioned in the laboratory and the medical clinic, new torchbearers appeared to carry the message on to mankind. Auto-intoxication became the byword of medical evangelists and patent medicine manufacturers. Colons could no longer be cut, but cathartics and laxatives could be invoked—with a vengeance.

Is there such a thing as auto-intoxication and, if so, is it a symptom of constipation? What are the symptoms of constipation? In the first two articles in this series, we examined the

THE ARTICLES TO COME

THE first three installments of CU's series on that much-discussed, much-treated, and little-understood ailment—constipation—have laid the groundwork for the analysis of treatments which will make up the coming installments.

Habit, psychological factors and diet; mineral oils, vegetable seeds, emulsions, enemas, etc., will all be considered in relation to constipation. The use and abuse of laxatives and cathartics will be evaluated in detail.



THE ORDEAL OF THE ENEMA
(Reproduced from "La Medicine en Caricature")

nature of the digestive tract and the causes of the ailment. When we have answered these two final questions we will have cleared the path for a rational approach to the treatment of constipation.

THERE is no doubt that a great number of symptoms may be associated with constipation. Bilioussness, headache, fatigue, and depression may accompany it. It is an entirely different thing, however, to regard constipation as the necessary cause of these symptoms. Constipation is of such common occurrence that its association with other symptoms may be purely accidental. Often the constipation and the associated symptoms have a common cause, the cure of which results in the relief of the constipation as well as of the associated symptoms. Thus, the constipation frequently present in typhoid fever is not responsible for the rash and fever occurring in that disease. The constipation is simply one manifestation of the infection by the typhoid germ. Again, constipation is very often present in people with disease of the gall-bladder, who also complain of "gas," bilioussness and abdominal pain. And again, the constipation is simply one manifestation of an underlying disease, the gall-bladder disease.

In that poorly understood disorder of the bowels known as "spastic constipation," constipation is associated

with "gas," colicky pains, nervousness, irritability, and easy fatigue. Here, too, the constipation is one of a number of symptoms caused by a nervous disorder in which the bowels play an important role. To treat the constipation alone is to treat only one manifestation of the disorder.

It is true that constipation may itself contribute to the development of a variety of minor symptoms. The number and intensity of these symptoms vary in different individuals. One person accustomed to regular bowel movements may not, for various reasons, have an evacuation for several days, and yet suffer no inconvenience. Another person may fail to evacuate at the accustomed time and then be seized by headache, fatigue, or listlessness. The appearance and intensity of symptoms appear to depend to a considerable extent upon personality.

Now if constipation is to blame for these symptoms, by what means does it set them up? The most popular theory is that they stem out of auto-intoxication. The stagnation of waste matter is supposed to promote the growth of bacteria and the absorption of poisonous products. Putrefaction is encouraged, and additional poisons are manufactured and absorbed into the blood stream, causing foul breath, furred tongue, "gas," nausea, depression, headache, insomnia, and irritability. But the theory of auto-intoxication

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is no longer accepted by medical experts. It is now chiefly the property of patent medicine merchants.

The evidence is quite clear. In constipation, the stool becomes hard and dry due to prolonged retention and absorption of water from the colon. The hard, dry feces do not undergo bacterial decomposition, and even if they did the colon would not be able to absorb any poison, because fluid is essential for the process of absorption. Furthermore, it is well known that the colon of every normal, healthy person contains billions of germs and that these germs are ordinarily harmless.

INTESTINAL intoxication (or more correctly, intestinal toxemia) does occur, however. It occurs as a result of the use of cathartics. Normally, little or no undigested food reaches the colon. When purgatives are taken, however, considerable undigested food is driven from the small intestine into the colon. There the food is attacked by bacteria and putrefaction occurs. The purgative also produces a liquid stool throughout the colon, in which the bacteria can thrive and manufacture their poisons. The watery stool also furnishes fluid for the absorption of toxins. Many people who believe they are suffering from auto-intoxication are actually suffering from an intoxication caused by cathartics. Auto-intoxication due to constipation is a myth, but intestinal toxemia due to catharsis is a reality.

Nor does constipation cause acidity or acidosis. Many cathartic salts advertisements claim that they not only "remove waste from the body but also help nature to restore a healthy alkaline reserve." The acidosis bogey has been invoked to promote not only cathartics but also cough and "cold" remedies. These claims are pure rot. Acidosis is a serious and frequently fatal condition occurring in major ailments such as diabetes and kidney disease. The body has an entirely adequate capacity for maintaining a healthy alkaline balance without the aid of patent medicines.

SO, AS we have seen, the symptoms accompanying constipation are not due to auto-intoxication or to acidosis. Experiments with human volunteers seem to prove that they may be due in some people to a mechanical

factor—the distention of the rectum.

Dr. Alvarez tells of experiments with healthy men who normally emptied their bowels once or twice daily. These men ate an ordinary liberal diet and withheld from defecation for 90 hours. At the end of that time, each subject developed symptoms which are regarded as characteristic of auto-intoxication; i.e., impaired appetite, depression, irritability, headache, insomnia. An x-ray examination of the intestines was then performed. It showed that the entire small intestine was empty and that all the waste matter had accumulated in the colon and rectum. After the bowels were evacuated, the distress was promptly relieved and in an hour or two the subjects felt quite normal.

The symptoms were not due to auto-intoxication but simply to mechanical distention of the rectum. Furthermore, Dr. Alvarez was able to reproduce the symptoms by stuffing the rectum with

cotton. If the symptoms had been due to poisons, relief would not have come until a day or so later.

In many cases of constipation, therefore, relief will be obtained not by stimulation of 12 feet of colon with a laxative or cathartic but simply by measures that will promote the complete evacuation of the rectum. These measures will be discussed in the treatment of dyschezia.

Some of the symptoms associated with constipation may be due also to "advertising intoxication." The evils of constipation have so long been dinned into us that when constipation does occur we feel anxious and panicky and experience the symptoms suggested by laxative advertising.

IN a great many people, the symptoms accompanying constipation have a more subtle origin—the bad education about the human body that

so many of us get when we are children and that was discussed at length in the last article. As children, we are told that we are good when we evacuate to order. When we are adults the idea that an action of the bowels is something meritorious and certain of reward still lingers in our minds. Naturally, moving the bowels has a tremendous suggestive effect, and we are rewarded for taking this or that laxative or cathartic by a free movement and relief from our symptoms. The relief, of course, is almost exclusively mental.

The symptoms associated with simple constipation may, therefore, be due either to distention of the rectum by feces as in dyschezia or to psychological factors such as bad training and mass advertising suggestion. We shall discuss methods of treating and overcoming these psychological handicaps in the next article.

A Warning to Consumers

(Continued from page 2)

lative attacks that have been made against the chains over the past few years, cites the increased strength of the independent merchants in their fight against the chains, and concludes thus:

What [the chains] need is a friend comparable in vigor and strength to the independents' lobby—a group of consumers who'll fight in legislative halls the country over for the chain method of distribution in terms of their own household budgets, and, incidentally, for the life of the chains. To organize those consumers and to teach them that the personal destiny of each is tied up with the destiny of the chain store system is the chains' biggest present objective.

So much for the reasons. What about the dangers of letting the chains go ahead with such a program? For the answer to this one, we turn to Professor Robert S. Lynd of Columbia University, co-author (with his wife) of those two deservedly famous books, "Middletown" and "Middletown in Transition." Prof. Lynd is a sponsor of Consumers Union and vice-chairman of the Consumers National Federation. Prof. Lynd attended the meeting at which the idea of the proposed Consumers Foundation was first broached. What he heard there we do not know, because all who attended were sworn to secrecy. But two weeks after the meeting Prof. Lynd wrote the following in the *New York Times*:

At this critical stage of consumer organization . . . the whole movement can be aborted if the present plans of manufacturing and retailing trade associations to set up "kept" consumer pressure groups are allowed to go forward unchecked . . .

Plans are actively under way to organize the women of the country as consumers who can be marshaled conveniently as occasion arises as a "front" behind which trade associations can fight for what they want. There is no doubt that in such matters as opposing price-fixing such business-controlled con-

sumer pressure groups can do work of genuine value to the consumer. The hitch . . . lies in the fact that such "kept" consumer groups will tend to do two things antithetical to genuine consumer organization.

The first of these is involved in the fact that not even the membership, let alone the general public, will be aware of their "captive" status and of who is pulling the strings to which they will dance . . . If business and consumer interests happen to coincide for the moment in the case of price-fixing, there is no reason at all in the light of past experience to expect that these "captive" consumer organizations, once set up, will be allowed to push on to back other vital interests of the consumer which may not be equally vital interests of business.

The second critical objection to these "captive" organizations of consumers is that the very presence of loudly published consumer groups in the field will tend to lull other consumer groups, ignorant of the true sponsorship behind these "captive" organizations, into thinking that the consumers' interests are being cared for . . .

So much for the dangers. And what can the consumer do to guard himself against them? The most important thing is to be fully aware of what's happening, and the story of what's happening is here. Keep it in mind; talk about it; be on the lookout for future activities of all "consumer" organizations the seed of which is planted by business groups.

CU will watch developments closely and report on them to its members. As for Mr. William Trufant Foster, whom we seem to have dropped by the wayside, we should like to direct a brief open letter to him:

DEAR MR. FOSTER:

CU has no desire to question your motives in this new extension of your activities. It is quite possible that they are perfectly pure and simple. But if that is so, then it would seem that you are being most woefully duped. One way or the other, we think you have got yourself into something that appears hard to reconcile either with integrity or intelligence. It would increase our estimate of you to hear that you are getting out of it. May we hear from you?

CONSUMERS UNION.

Portrait of a Menace

IN GERMANY in 1924 nearly 10,000,000 workers were members of trade unions. For eight years thereafter—until 1932—the number steadily increased. A year later there were no union members at all. For in 1933 Adolph Hitler and his Nazis came to power and labor unions were the first thing to go.

What has happened to German labor since has by now become a matter of pointed concern on two fronts of American life. It is hardly a secret that in some of the large corporations of this country the techniques of Der Fuehrer and his cohorts are followed with avidity and approval and a pricking feeling of "why can't we get away with that, too." It is no secret at all that a large section of labor, fearing that they *will* get away with it some day, looks across the water worriedly and grows cold as it hears the sound of the Nazi pile-drivers pounding the German workers into serfdom.

But it remains a fact that a very large proportion of Americans—including much of labor—is inclined to attach no specific significance to what is happening in Germany. There are those to whom Germany and the Nazis are simply remote, the meaning of which is that "it can't happen here." And there are those who find the conduct of the Nazis so completely amoral, so bizarre and ruthless, that they characterize what's going on as the work of maniacs and let it stand thus.

Both attitudes are understandable enough. But there is infinite danger in each of them. For it can happen here. And the pattern of its happening, as set by the Nazis, is not mad but coldly calculated.

Of what does the pattern consist? The answer to that question receives its fullest expression to date in a book published last month under the title of "The Spirit and Structure of German Fascism."* It comes from Robert A. Brady, Associate Professor of Economics at the University of California, and one of the original directors of Consumers Union, of which he is now a vice-president. And it comes with a foreword by Professor Harold J. Laski, the famous English economist, in which it is termed "the most complete [analysis of Fascist institutions in Germany] that exists in the English language." It does not make for happy reading; its picture of the cancer on the heart of a once great nation is too complete for that.

But it makes for reading that will knock apathy, or disbelief, on the head. And the story that it tells of the degradation of labor in Germany—where it has happened—is a story written in letters of fire for all labor in America—where it may happen.

The net of labor's status under the Nazis, as Prof. Brady points out repeatedly, is that the workman has lost all rights save one: the right to serve. The conditions of the serving are matters beyond his influence and—the feeling is inescapable—eventually to be beyond his concern. Consistent with the Nazi philosophy as manifested throughout all German life, the worker is a "Fol-

lower," the employer is a "Leader." And "the Leader makes decisions over against the Followers in all affairs relating to the business, in particular over the fixing of all labor conditions." Hours? Wages? Fines? Firings? General attitude? By full legal authority, these are matters for the employer alone to decide.

That concept is remote, indeed, from the *idea* of American democracy. But the shadow of Tom Girdler can be seen on the edge of it.

What has become of the trade unions? Well, they were all absorbed into the German Labor Front. And what is the Labor Front? One way of putting it is that it is the Nazi answer to that prime Nazi question: "How far can the exploitation [of labor] be carried without giving rise to revolt, without causing labor to resort to strikes and sabotage?"

It is the fundamental function of the Labor Front to divert the laborer from the vulgar materialism of wages to the nourishment of "ideals" and "the spiritual values of the nation"; it is its function, through divisions set up for the purpose, to represent the worker in terms of the State's (for which read employer's) interest; it is its function, in short, to serve as a glorified, nation-wide, intensified company union. And Prof. Brady tells precisely how it does, down to the last bitter detail.

In the Labor Front the workings of the entire Nazi organism can be seen in bold relief. For "the Nazi system represents," writes Prof. Brady, "nothing more than an extension to the nation at large of the rules, the behavior patterns, and the points of view of the ordinary autocratically governed business enterprise, nothing more—with this exception, that it adds thereto power to enforce complete conformity with its point of view on the part of all members of the community, regardless of class, station, or interest." The shadows of the Girdlers can be seen dancing there, too.

The fight of American workers, of Americans of any group who do not wish to join the Girdler dance, must be to throw a shadow across the whole Fascist philosophy big enough to blot it out. And a shadow big enough to do that can only be cast by a compound of all the elements of progressiveness that the nation holds.

That means white collar workers and workers in the professions no less than factory and farm workers. For the living standards and the lives of all who are employed suffer equally under the dry rot of Fascism. It means consumer organizations along with labor organizations, for these are two sides of the same thing and under Fascism they suffer equally. It is a matter of utmost importance to remember that the wages of labor do not decline without a corollary decline in the economic life of the entire nation (its *fuehrers*—for a while—excepted). And it is just as important to remember that standards of consumption—the availability and the quality of goods—suffer to the full extent of any such decline.

Awareness of what threatens—and a united fight to void the threat—are terribly necessary today. The dull sounds of destruction that come across the ocean from Germany will provide an accompaniment to the fight.

*"The Spirit and Structure of German Fascism," by Robert A. Brady; Viking Press, New York; 420 pp.; \$3.

